

Land-Water Management and Sustainability:
An Indigenous Perspective in Laitu Khyang Community, Chittagong Hill Tracts (CHT),
Bangladesh

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By

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ABSTRACT

There is an increasing recognition in environmental sustainability research of the significance of Indigenous land and water management practices that are locally developed and grounded in traditional resource use. This dissertation explores land and water management policies and practices in the Chittagong Hill Tracts (CHT) region of Bangladesh, with a particular focus on traditional Indigenous and invasive government and non-governmental policies and practices enacted within the Laitu Khyeng Indigenous community located in the CHT. Three main questions guide the study: (1) What were traditional Indigenous Laitu Khyeng land-management customs and practices, particularly in relation to environmental sustainability? (2) To what extent were Laitu Khyeng community members affected by introduced land-management policies, such as those promoted by government, NGOs, commercial companies, and multinational agencies? And, (3) What were Laitu Khyeng hopes and expectations regarding land management policies and practices, particularly in relation to environmental sustainability? Data collection methods included: traditional sharing circles, individual story sharing, photovoice, participant observation, and commonplace books. The research findings revealed that current management practices, imposed by both government and non-government agencies, have seriously undermined local, traditional land and water management practices. The effects of these management projects include: dramatic increase in the non-Indigenous population resulting from an outsider brick-field industrial project within the last 10 years; increased destitution, displacement, and deforestation of natural resources resultant from force, fraud, and manipulated occupation of forest and plain land over two decades; recent expansion of the Bangladesh Forest Department and private companies' lumber plantation projects by outsiders; and increase in national and multinational corporations' tobacco plantation projects

within last 15 years. Addressing questions of resource management and sustainability, participating Elders, knowledge-holders, and community leaders articulated meanings of land and water management in terms traditional cultivation culture, administrative structures, and spiritual practices. In addition to these themes, youth participants emphasized land and water management as involving key responsibilities, including learning traditional cultivation knowledge from Elders, and organizing peaceful campaigns to protect their land, water, and identity rights. The research findings demonstrate that the Laitu Khyeng Indigenous traditional land and water management practices value biodiversity, human and nonhuman relationships, spirituality, conservation, historical practices protection, and also draw from non-Indigenous knowledge and practice in environmental resource management. To achieve environmental sustainability in the community, participants emphasized that all youth in the community learn local Indigenous knowledge and practices in order to protect the environment.

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DEDICATION

This thesis is dedicated to my mom (Amyo Datta) and the Laitu Khyeng Indigenous community whose love, support, and generosity allowed me to pursue every dream I ever had with the full confidence that I could achieve anything that I set my mind to.

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LIST OF ABBREVIATIONS

Actor-Network- Theory- ANT

Association for Land Reform and Development- ALRD

Bangladesh Forest Department Policy- BFDP

Bangladesh Forest Industries Development Corporation- BFIDC

Chittagong Hill Tracts- CHT

Deputy Commissioner- DC

Focus Group Discussion- FGD

Global Positioning System- GPS

Human Rights- HR

Individual Story Sharing- ISS

International Development Research Centre- IDRC

Non-Governmental Organization- NGO

Participatory Action Research- PAR

Protected Forest- PF

Reserve Forest- RF

Saskatoon Community Radio- CFCR 90.5

Traditional Sharing Circles- TSC

Unclassified State Forest- USF

United Nations Development Programme- UNDP

United Nations Educational, Scientific, and Cultural Organization- UNESCO

United Nations- UN

CHAPTER ONE: THE PROBLEM

In this thesis, I explored meanings of land-management and sustainability through participatory action research (PAR) with members of the Laitu Khyeng¹ Indigenous community in the Chittagong Hill Tracts (CHT), Bangladesh. This community, once isolated and thriving in its own way, is on the brink of extinction (Adnan, 2004). Traditionally, the Laitu Khyeng took care of extracting environmental resources without destroying the forest, as sustaining it was necessary for their long-term survival in the area (Adnan, 2004; Mohsin, 2002; Roy, 2000). However, according to Adnan (2004), Khyeng land-based rituals, practices, and traditional experiences, as well as its spiritually dominated socio-political structure, have been changing in recent years. These changes, which have been reported in various research studies as being due to government development projects and forest management policies, can be understood to be part of new land-based processes introduced through the 19th to 21st centuries during European colonization (Adnan, 2004; Mohsin, 2002; Roy, 2000). Despite the official end of colonization in 1947 across South Asia and in CHT, Bangladesh, people have continued to experience threats to their land rights, culture, and spirituality through government land-management, resettlement, displacement, development projects, and forest management policies (Mey, 1984; Thapa & Rasul, 2006).

The main focus of this thesis is twofold. First, it examined traditional Indigenous land-based practices and sustainability, including their possible implications for alternative future land-management policies. Second, it examined the nation state's more recent land-management policies and development projects on Laitu Khyeng Indigenous land and in their

¹ Laitu Khyeng Indigenous people those who are inhabited in *Gungru Muke Para* and *Gungru Madom Para* (village) in the Bandarban district CHT Bangladesh (Adnan, 2004; Chapola 2008).

communities. This research explored the perspectives of community members on these two topics, including their understandings and rituals regarding land-water management and sustainability as directly connected to their currently precarious conditions.

This research is organized into five chapters. This first chapter introduces the research focus, ethnic diversity, and purpose of the study. It also presents the research questions and a brief outline of my theoretical framework, research methodology, and methods. Chapter two is the literature review, which is split into two parts. The first part discusses existing literature on land-water management in CHT Indigenous communities, including the consequences of British colonial and neo-colonial nation states' land- water management in CHT Indigenous communities, such as the Laitu Khyeng Indigenous community. The second part of the literature review includes a discussion of my relational theoretical framework in connection with various concepts such as land, management, and sustainability. Chapter three discusses a relational Participatory Action Research (PAR) framework and locates myself in this collective research processes. This chapter also discusses the study design including location, participants, and collective data collection methods (traditional story sharing circle, individual story sharing, participant observation, photovoice, and commonplace book) and data analysis. The findings of the study are provided in chapter four. In this chapter, the reader is presented with a discussion of the Laitu Khyeng traditional understanding and practice of land-water management and environmental sustainability. This chapter is categorized into three domains aligning with the three research questions such as: Theme 1: meanings of land, water, and management; Theme II: the community's perceptions of the Bangladesh government's land and water management policies; and Theme III: hopes, dreams, and responsibilities for sustainability. The final chapter discusses interpretations from the findings as well as

implications for policy, practice, future research, and limitation of the study. Also included in the last chapter are my personal reflections on the process of conducting the study.

Research Context

This research was set within the Chittagong Hill Tracts (CHT) area of Bangladesh. With an area of approximately 5,089 square miles in the southeastern part of Bangladesh, the CHT covers ten percent of the land in the country and is divided into three districts: Bandarban in the south, Khagrachari in the north, and Rangamathi in the center. All three districts differ from the rest of Bangladesh due to their mountainous and forested landscape, ethnic composition, and cultural and spiritual lifestyle (Adnan, 2004; Chowdhury, 2008). The CHT was originally inhabited by diverse groups of Indigenous communities (Dastidar & Adnan, 2011; Roy, 2000), although there is disagreement regarding the number of these original Indigenous communities and the naming of current Indigenous communities in the CHT (Chowdhury, 2008). There are many Indigenous communities identified in the literature including *Tanchangya*, *Tripura*, *Pankha*, *Marma*, *Mru*, *Lushai*, *Khumi*, *Khyeng*, *Chak*, *Chakma*, *Bawm*, *Santal*, *Rakhin*, *Gurkha*, and *Ahomia* (Adnan, 2004). The Laitu Khyeng (Figure.1) is one of these Indigenous communities in the CHT region of Bangladesh and is the main community in the region that focused on this study.

A number of common practices and values existed in the Indigenous communities in the area prior to colonization. For example prior to the mid-1700s, political power in CHT Indigenous communities, including the Laitu Khyeng Indigenous community, operated through Indigenous traditional culture and customs. Land-management had been maintained by communities' spiritual relationships and traditional experiences (Schendel, Mey, & Dewan,

2001). The people had close relationships with the land, animals, and plants; they were thought of as protection from food crisis and as members of the greater community (Mey, 1984).

However, much changed in the CHT Indigenous community as a result of colonization. Colonization initially occurred in Bangladesh via British imperial rule in 1757 and formally ending almost 200 years later in 1947. Colonialism, Mohsin (1997) argues, became a powerful actor in defining Indigenous people's lives through discriminatory state development models, such as reserve forests and, commercial logging, and the act of giving access Indigenous land to outsiders. Such models gave theoretical and practical tools to the colonizers or developers to maintain the oppressive situations to their advantage. For example, in the 1860's the British first occupied the CHT, taking power from Indigenous communities (Schendel et al., 2001). These land-management policies imposed by the British state were aggressive towards the CHT Indigenous communities (Adnan, 2004) and introduced what Schendel et al. (2001) call the first "colonial" stage affecting traditional land-management practices (p. 3). Several other studies (e.g., Adnan, 2004; May, 1991) explain that through the British controlled land-management policies, the CHT Indigenous land was first opened to business persons from outside of CHT, initiated by colonial British state to encourage investment and use of Indigenous lands for profitable purposes. Roy (2000) similarly shows that the British development models and forest management policies led to the use of Indigenous forest land for business, which challenged Indigenous communities' traditional cultural practices. During the period of British rule, the region studied in this research project was formally named Chittagong Hill Tracts. According to Schendel et al. (2001) and Adnan (2004), the British decided to recruit three Indigenous leaders for this region for two main reasons; to be able to use CHT land and to collect taxes from Indigenous people. As Mohsin (2002) and Roy (2000)

explain, the implementation of British government taxation policies served to undermine Indigenous traditional administrative structure and management practices.

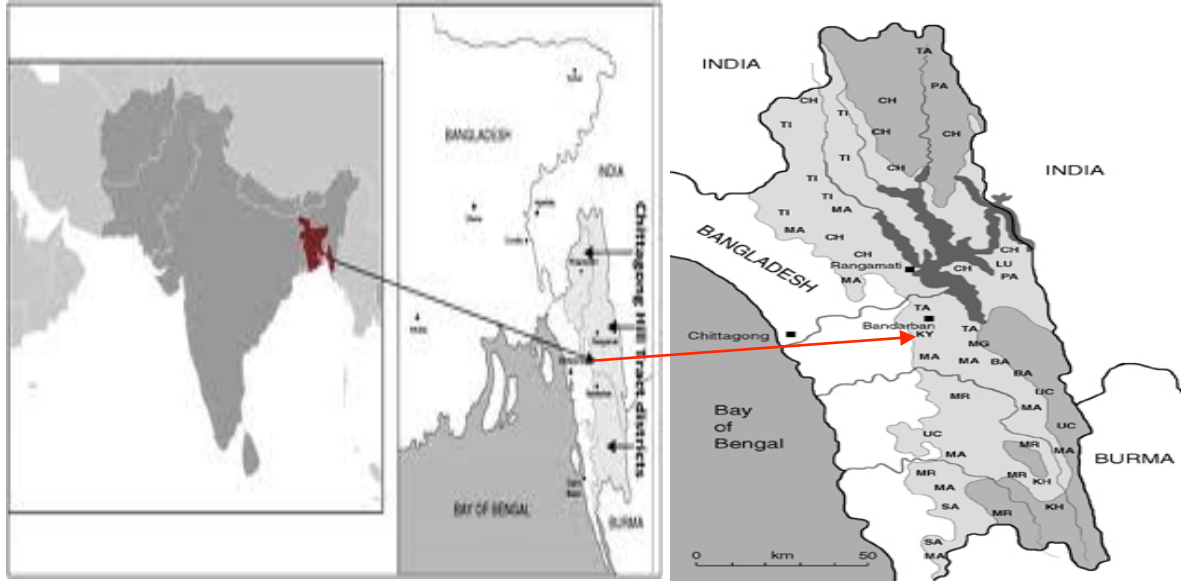
Indigenous traditional land-water management practices faced more challenges in neo-colonial² nation states, such as Pakistan, 1947-1971, and Bangladesh, 1972-present, as well as those that have been more recently imported through practices and structures of economic globalization (Adnan, 2004; Roy, 2000). Bangladesh and Pakistan can thus be viewed as a neo-colonial states, by which I mean the current colonial attitudes that these nation state governments have towards CHT Indigenous communities in Bangladesh, such that colonial land-management policies are ongoing (Adnan, 2004; Roy, 2000). Neo-colonial states, Schendel et al. (2001) explicitly argue, have ignored Indigenous traditional land-management policies, as well as marginalized, and suppressed CHT Indigenous people and kept them from their land rights. Similarly, Mohsin (1997) thinks that colonialism has not yet ended in the CHT; rather, it has taken new forms of exploitation. Through various forms of exploitation such as land grabbing, displacement, and imposing dominant education and language on Indigenous communities, the Pakistani and Bangladeshi nation states continue to perpetuate colonial imperialism in CHT Indigenous communities (Adnan, 2004; Nath & Inoue, 2009). These impacts continue to affect the land rights, traditional practices, and culture across Indigenous communities in CHT Bangladesh (Adnan, 2004). To stress the point, Roy (1996) explains that these neo-colonial states have not only given land entitlement to outsiders, they have also introduced various uneven development programs on CHT Indigenous land.

² Neo-colonial I mean new forms of colonialism, as perpetuated through globalized trade, etc, as well as continued existing colonial practices in relation development model and land management (Escobar, 2010).

Studies by Adnan and Dastidar (2011), Mey (1984), and Roy (2000) show that the neo-colonial states' land and forest management policies also have had far-reaching effects on Indigenous culture. For instance, these policies have been contributing factors in the separation of Indigenous people from their relationships with organisms (including animals, birds, plants, parasites, and fish), spirituality (including natural law, feelings, and respect), and physical reality (including land and local mode of production) (Berkes, 2009). According to a number of studies (e.g., Adnan & Dastidar, 2011; Chapola, 2008; Mey, 1984; Roy, 2000), like other Indigenous communities in CHT, the Laitu Khyeng Indigenous community has been affected by colonial and neo-colonial states' land-management policies. Adnan (2004) argues that the Laitu Khyeng Indigenous community is the most alienated Indigenous community in Bangladesh, in part due to being one of the poorest Indigenous communities in CHT. Adnan (2004), Chakma (2010), and Roy (2000) explicitly argue that there is a need to promote Indigenous land management practices in government projects in ways that protect Indigenous land rights, culture, identity, and ecosystems.

Though traditional practices have been changing due to colonial and neo-colonial state land management approaches, Indigenous communities' traditional practices are still known and used in the cultivation of the land for domestic purposes (Roy, 2000, p. 54). For example most CHT Indigenous communities still continue to be economically dependent on their traditional cultivation practices, such as fishing, trapping, and gathering, within their land and forest (Adnan, 2004). These forms of land use have been traditionally distributed and managed by Indigenous leaders known as Chiefs, Head (men-women-others), and *Karbari* (village head) (Roy, 2000).

The context set out above exemplifies the need to study Indigenous traditional land management practices, critically exploring existing government land-management policies, and their expectations and hopes for future land-management policies. Existing research on Indigenous communities in the sub-continent, especially in the CHT, has mostly been based on either government documents or development frameworks. Government documents tend to ignore Indigenous traditional culture and customs, while according to Jashimuddin and Inoue (2012) and Adnan (2004), development studies are mainly concerned with governmental and non-governmental economic interests. Roy (2000) also argues that the literature often overlook colonial and neo-colonial nation-states and multinational agencies' marginalizing attitudes towards Indigenous communities in CHT. Such literature often justifies development models over Indigenous traditional practices, such as the *Karnafully* Paper Mill project in 1953 and the *Kapati* Dam in 1957, not to mention favors the interests of tobacco companies and commercial plantations (1972-presents), resettlement policies (1975-85), and commercial companies. Debnath (2010) also states that Indigenous traditional and spiritual practices are mostly ignored in these economic, profit-based project processes. Similarly, Banerjee (2000) explains that the mainstream literature is ignorant of the ongoing brutality toward Indigenous people's land rights and traditional practices. This study aimed to explore critically existing development projects and policies in relation to Laitu Khyeng Indigenous land management practices.



*Figure 1. Map of Indigenous Communities and Laitu Khyeng Indigenous in CHT, Bangladesh. This figure represents Indigenous Communities in CHT, Bangladesh: BA- Bawm, CH- Chakma, KH- Khumi, **KY- Khyeng**, LU- Lushai, MA- Marma, UC - Uchay, MR- Mru, PA- Pankho, SA Sak, TA Tanchangya. Indigenous Work Groups of Indigenous Affairs (IWGIA), Retrieved May 29, 2015, from <http://www.iwgia.org/regions/asia/the-chittagong-hill-tracts>.*

Ethnic Diversity

In this section, I describe Bandarban District's ethnic composition and its changing patterns. The aim is not to provide a comprehensive and rigorous analysis of Bandarban District's ethnic diversity. Rather, this focus on Bandarban District's ethnic composition helps to bring out distinctive features of the Laitu Khyeng Indigenous villages in terms of their living conditions, and social and economic activities.

Historically the Bandarban District (the Laitu Khyeng Indigenous research site) in Chittagong Hill Tracts (CHT) has been ethnically diverse, including Marma, Chama, Bawm, Tanchainghya, and Mru Indigenous communities. This diverse ethnic composition is important for multiple environmental activities such as: traditional Jhum and plain land cultivation, livestock and poultry raising, fruits growing, hunting and gathering, fishing, spinning and weaving, and craft work. However, this ethnic composition has been changing rapidly and coming under serious threat due to a number of critical

factors and events. For example, studies (e.g., Adman, 2004; Ahmed, 2012; Chakma, 2010; Roy, 1996) have identified influential economic activities introduced by Bangali settlers following transmigration, as well as by government departments, development agencies, private sector businesses of local, national, and foreign origins. Evidence shows that these factors have been damaging the Bandarban district's ethnic diversity.

The Laitu Khyeng Indigenous community's villages are interconnected with other Indigenous communities' villages including Marma, Bawm, Tanchainghya, and Mru communities. Although these Indigenous communities' languages, cultures, and celebrations are varied and uneven in terms of content, they complement each other in many respects (Chakma, 2010). The varied ethnic composition also highlights the diversity of environmental, cultural, and economical land-management practices in the Bandarban district (Chapola, 2008). Loffer's (1991) study with the CHT Indigenous community shows that the sharing of practices among communities upholds belongingness and traditional cultivation cultures. Adnan (2011; 2004) also explains that such sharing of cultivation practices in the Laitu Khyeng Indigenous community, builds a "sense of community based on the consideration that the inhabitations of the village have, so to speak, grown up together and share a common culture" (2004, p. 68).

The diverse ethnic composition in Bandarban District leads to peaceful living conditions for Indigenous communities. For example, the boundary is defined by the actual location of a cluster households, which the members of the various Indigenous communities acknowledge as a shared village community. Such mutual living and cultivation approaches are socially and culturally accepted practices (Adnan, 2004). Diverse ethnic composition in Bandarban district can be understood as a form of unity for Indigenous communities in the area.

Although the diverse ethnic composition is important for Indigenous land-management practices and culture, the shared traditional land-management practices are under threats from illegal settlement activities. As evident from the data on ethnic composition, in 1872 the Bandarban district's ethnic diversity included Marma - 40%, Mru - 20%, Tanchonga - 10%, other Indigenous groups

(Khyeng, Mru, and Bawn) - 28%, and Bangali - 2%. However, ethnic diversity is under serious threats. For instance, in 1991 the Bandarban district's demographic became Bangali - 52%, Marma - 26%, Tripura - 4%, Tanchonga - 2%, Mru - 10%, Khyeng - 1%, and Bawn - 3% (Adnan, 2004). According to Brauns and Loffler (1990) and Roy (1996) the Bandarban district's ethnic diversity has been drastically reduced during the internal displacement of the postcolonial period (Pakistan 1947-1971 and Bangladesh 1972-current). Many Indigenous communities' displacement has been caused by "acts of violence as well as their [Indigenous] changing survival needs" (Adnan, 2004, p. 54). Another example from the National Newspaper (Prothom Alo, 2015) shows that the Bangali-owned profitable Brickfield Company is forcefully trying to break peaceful, diverse ethnic relationships in the Laitu Khyeng community. This article also reported that this project has brought more than 1000 Bangali migrant workers into the Laitu Khyeng Indigenous community within the last ten years.

These above recent changes have been challenging the peaceful and sustainable ethnic composition in Bandarban District (Roy 1996). Therefore, Adnan (2004) and Chapola (2008) clearly state that recent migration and development projects are not only endangering the Laitu Khyeng Indigenous community's sustainable and relational practices with others diverse ethnic communities, but also have led to the Laitu community being one of the poorest Indigenous communities in Bandarban district, with a generally lack of access to land and water.

Research Questions

In this study, I examined how government land-management policies in the Chittagong Hill Tracts (CHT), Bangladesh affect traditional Indigenous practices with a particular focus on the Indigenous Laitu Khyeng community in the region. Specifically:

- What were traditional Indigenous Laitu Khyeng land-management customs and practices, particularly in relation to environmental sustainability?
- To what extent have Laitu Khyeng community members been affected by introduced land-water management policies?

- What are Laitu Khyeng hopes and expectations regarding land-management policies and practices, particularly in relation to environmental sustainability?

Research Rationale

This research filled various gaps in knowledge of the Laitu Khyeng Indigenous community of Bangladesh. Particularly, this study examined Indigenous land alienation, the importance of local practices and traditional ways of land-management, local ways of practicing sustainability, and the issues regarding existing government and non-governmental land-management projects. In accordance with the research questions, this study was guided by critical concerns of identifying the problems with existing land-management and policies and finding ways to frame the Laitu Khyeng Indigenous community's meanings of sustainability as they relate to their everyday land management practices and traditional experiences of management. This study situated itself within this context and took a significant step in exploring identity and justice in relation to Indigenous understandings of sustainability and land-management (Adnan, 2004; McKenzie, Hart, Bai, & Jickling, 2009).

The study aimed to make a contribution to both research and practice in ways that benefit the participants, in the hopes of inspiring a new culture of sustainability in Indigenous regions, particularly in the Laitu Khyeng Indigenous community. For example, participants articulated diverse cultural practices related to environmental issues and solutions, demonstrated relationships to their environment and their ancestral land and water, found opportunities to document their traditional experiences with their environment, and shared their knowledge with each other.

Theoretical Framework, Methodology, and Methods

Using a conceptual framework of a relational ontology, in the thesis I examine meanings of land-management and sustainability, such as traditional experiences, culture, and customs, which are important issues for Indigenous lives and the environment (Datta, 2015). A relational ontology invokes a collaboration of ontologies which come from people's everyday culture and practices (Datta, 2015, Escobar, 2011). It deconstructs our pre-existing ideas of land management, and it implicitly leaves behind all prioritizations which contain a modern dualistic source (Datta et al. 2014a). A relational ontology also focuses on the researcher's relational accountability and obligations to the study's participants and research site (Datta et al., 2014b; Wilson, 2008, 2007).

To complement a relational theoretical framework, we³ used a participatory action research (PAR) methodology. PAR has been in other research to foster change through community-based participation, building off participants' everyday local practices, culture, and relational and spiritual knowledge (Datta et al., 2014b). Five methods of data collection were used. These included traditional sharing circles (TSC) used for sharing land-management experiences and expectations in the community. Individual story sharing was used for deeper understanding of land-management and sustainability from participants' personal experiences. Photovoice was used for exploring relational and spiritual land-management stories. Commonplace books (Sumara, 1996) were used for collecting personal experiences and feelings regarding introduced land-management practices; Finally, Participant observation⁴ was used for understanding and interpreting the participants' expressions and responses.

³ Elders, knowledge-holders, leaders, four co-researcher participants from the community, and myself

⁴ Participant observation was conducted only through co-researcher participants. Due to a Canadian Government travel advisory I was not able to participate in this observation process. See chapter three for more information.

Outline of Remainder of the Document

This introductory chapter has outlined the significance and focus of this study, as well as introduced the theoretical framework and methodological approaches of the research. It introduced the context of the study by describing the effects of colonialism and neo-colonialism in the CHT (the Laitu Khyeng community in particular) in relation to land management in the area. The remainder of the thesis will focus on a review of the literature in chapter two, and the details of my research design and methodology, including my collective methods of data collection and analysis in chapter three. The findings of the study are provided in chapter four. In this chapter the reader is presented with: participants' views on land-water, management, and environmental sustainability; the current status of environmental management policies and practices in the Laitu Khyeng community; the participants' visions for engaging environmental sustainability in both youth activities and the community; and inconsistencies observed in policy, practice, and communication. The final chapter discusses interpretations from the findings as well as implications for policy, practice, future research, and limitations of the study. Also included in the last chapter are my personal reflections on the process of conducting the study.

CHAPTER TWO: REVIEW OF RELATED LITERATURE

In this chapter, I examine existing literature on Indigenous communities in Bangladesh, focusing on land-management practices, development models, and environment degradation. I begin with a review of the Chittagong Hill Tracts (CHT) Laitu Khyeng Indigenous peoples, who are at the center of this study by providing a brief discussion of CHT Indigenous communities' land-management and land relationships. The existing literature examines how Indigenous communities, including the Laitu Khyengndigenous community, have been represented, used, and translated by colonial and neo-colonial governments' land management politics, development projects, and environment degradation. Since there is a lack of existing academic research on the Laitu Khyeng Indigenous community, I rely on a number of different resources, including scholarly books, Human Rights (HR) reports, and literature on other Indigenous communities from CHT in Bangladesh. In the latter part of this chapter, I explore my theoretical framework and its basis in literature on land, management, and sustainability. The contexts, goals, and representation of existing studies inform my thesis and reveal the gaps the research seeks to fill between traditional land-management practices in CHT Indigenous communities and land-management policies and development projects in colonial and neo-colonial states.

Land Management Practices in CHT

By building on and linking existing literature, the differences between land-management practices of the Chittagong Hill Tracts (CHT) Indigenous communities and the approaches of colonial and neo-colonial states, such as Pakistan and Bangladesh emerge. These differences will be discussed below, as well as the impacts of colonial and neo-colonial states'

development projects on the local environmental and in the Indigenous communities land use in the CHT, including the Laitu Khyeng Indigenous community, over the past two centuries.

Indigenous communities have been living sustainably on the hilly land of CHT for several centuries (Mey, 1984; Roy, 2000). The CHT Indigenous land management studies (Adnan, 2004; Schendel et al., 2001) explain that CHT Indigenous communities' land-management practices are relational and spiritual. Furthermore, within Indigenous land-management, "knowledge is well proven, practiced and accepted by the local people" (Mohiuddin & Alam, 2011, p. 478), while their Indigenous practices are "dynamic, evolving to suit changing circumstances and remaining relevant to the groups' socio-make up" (Mohiuddin & Alam, 2011, p. 478). Such knowledge and practices are about caring for various kinds of plants and cattle, as well as producing food. Indigenous land management is in actual practice used for *Jhum* cultivation, hunting and fishing grounds, and homestead lands; it also refers to growing everyday foods and fruits, keeping livestock and poultry, hunting and gathering, fishing, making cloth, and producing local alcohol (Adnan, 2004). Similarly Roy (2000) explains that Indigenous land-management practices in CHT "are not under individual ownership but are identified as common lands, accessible to all members to the community" (p. 54). Roy (2000) also discusses that since the CHT Indigenous communities do not own the land as property, they historically have not carried any kind of written documents according to western expectations. Land resources in management for Indigenous communities, "are open access and are not weighted down by any property rights, and any resources that have multiple users" (Baten et al., 2010, p. 3). Thus, CHT Indigenous traditional land-management has been practiced as relational as well as spiritual and accessible to everyone in the community for several centuries.

CHT Indigenous communities' land-management knowledge is significant for their lives, identity, culture, and everyday practices (Roy, 2000). Such knowledge, Roy suggests, is a process of empowerment for Indigenous men and women on their land. Their knowledge equally engages men/women, animals, native plants, and landscape. It is also a process which sustains a rich biodiversity of plant varieties (Adnan, 2004; Roy, 1998; Thapa & Rasul, 2006). Knowledge of land-management, to Indigenous people, means protecting themselves, animals, plants, and others in a collective process (Jashimuddin & Inoue, 2012).

Indigenous land-management practices, however, have been challenged by the land-management approaches of both the British colonial state (1757-1947) and neo-colonial states' (Pakistan 1947-1971; Bangladesh 1972- present) (Adnan & Dastidar, 2011). Government land-management interventions in the CHT started during the British colonial period (Adnan, 2004; Adnan & Dastidar, 2011; Chakma, 2010; Roy, 2000). During 1882-83, the British colonial government first declared 24% of Indigenous land as a reserved forest without consulting with the Indigenous people of the CHT (Roy, 2000). Roy (2000) argues that state alternative colonial land-management approach inspired outsiders in the Indigenous land, these initiatives reduced Indigenous people's entitlement to their land rights and strongly prohibited Indigenous traditional land-management practices. The CHT Indigenous land has been defined, Roy (2000) argues, as a reserve forest by British colonial state for the purpose of state economic profit. The British Colonial state's land-management approaches were officially promoted through the British government's 1900 regulation (Rule 34). In the CHT's, the 1900 regulation, the Rule 34. had been widely criticized for increasing numbers of population in the CHT. Thus, in the 1920's, the colonial state strictly forbade outsiders because of the significant increase of plain land population in the CHT (Adnan, 2004). Thus, Indigenous traditional land-

management and spiritual practices first faced significant challenges through British colonial land management policies.

Not only were colonial land-management strategies in the CHT Indigenous land unchallenged during neo-colonial Pakistani and Bangladeshi states' regimes, but these strategies became more of a challenge for Indigenous spiritual and relational land-management practices during these regimes (Adnan, 2004; Mohsin, 2002). According to Mohsin (1997), the Pakistani government sponsored a number of land-management projects on CHT Indigenous land that resulted in land alienation, taking control of land rights, and changes in resource management. The Laitu Khyeng Indigenous community, like other Indigenous communities in the CHT, faced challenges as a result of several Pakistani government management projects, such as the *Karnafuli* Paper Mill in 1953, CHT and *Kapati Dam* in 1957-63, and a change to Rule 34 by the Pakistan government (Adnan & Dastidar, 2011). The *Karnafuli* Paper Mill was the first project of the Pakistani state government' which prohibited Indigenous traditional cultivation and cutting of spiritual plants and trees from the Indigenous mother land. According to Adnan (2004), Roy (1998), and Mohsin (1997) the Pakistani government's most controversial land-management project, the *Kapati Dam*, was undertaken on CHT Indigenous land in 1957-63. Adnan (2004) states that one of the main targets of this management project was to produce electricity for outsiders, with all the jobs in the construction phase being given to outsiders. The project (also known as the *Kapati Electric Dam*) flooded 40% of the Indigenous cultivated land leaving 400, 000 Indigenous people displaced. This led to low population growth in CHT area. Furthermore, according to Mohsin, (2002) and Schendel et al., (2001), another significant threat to CHT Indigenous land-management policies during 1960-1971 was the Pakistani government's redefining of Rule 34, which allowed the government to

give access to Indigenous land without Indigenous communities' consent. All three land-management projects devastated the region and had disproportionately negative effects on Indigenous communities.

The lives of Indigenous peoples, including their traditional land management practices, came under serious threat again under Bangladeshi government regimes (1971-current) (Adnan, 2004, Roy, 2000). Immediately following the independence of Bangladesh (1971), the first Prime Minister advised Indigenous people to forget their Indigenous identity and become Bangali if they wished to live in Bangladesh (Mohsin, 1997, 2002). The neo-colonial Bangladesh state government started the nationalization of Indigenous land from 1975 to 1985 under the name of resettlement (shifting homeless and prisoners populations from around Bangladesh into CHT Indigenous land) projects (Adnan, 2004). One hand, this new settlement project had removed more than 400,000 Indigenous people from their land, and on the other hand, it gave governmental incentives to the new settlers in the form of initial grants, land, and weekly food support in the name of protecting nationhood (Adnan, 2004). During this time, under two political regimes, there were 300,000 internal migrations in the CHT by this management project (Adnan, 2004; Roy, 2000). Adnan and Dastidar (2011) state that this illegal migration is still continuing under various management projects. In the neo-colonial Bangladeshi state representation of land-management policies, not only have traditional land-based practices been identified as “anti-development” but also Indigenous traditional experiences have been recognized as “anti-national” ideas (p. 130). Indeed, studies (e.g., Adnan, 2004; Mohsin, 2002; Roy, 1998) show that Bangladeshi state land management projects have become more exploitative in order to justify forceful migration into Indigenous

land by arguing that all land rights are owned by the government and not by the local Indigenous people.

Another step was taken by the Bangladeshi state, as Schendal et al. (2001) explain, was to divide CHT Indigenous land into plain and mountain land solely for political reasons. Through these boundaries, the government officials in charge of the CHT area wanted to displace Indigenous people from their original lands (Schendal et. al., 2001). In 1974, Rule 34 was used again to reduce Indigenous traditional practices on their land (Roy, 2000). For example, Rule 34 allowed the Bangladeshi state to control forcefully Indigenous traditional hunting, cultivating, and collection of food on their land (Mohsin, 2002). In 1979, Rule 34 was significantly amended so that Indigenous land was given to any “deserving person” where “deserving person was left undefined” (Adnan, 2004, p. 41). Adnan (2004) states that neo-colonial states have changed Rule 34 only for controlling Indigenous communities’ environment resources. From the 1980’s to the Peace Accords in 1997, and until recently, contemporary state policies have not changed from colonial practices; rather, state land management policies became more exploitative towards the local Indigenous communities.

The Bangladeshi government’s reserve forest policies have also been widely used to reduce Indigenous management practices and access to their environment, in terms of their cultivation land, hunting the land, fishing land, and so on (Adnan, 2004; Rasul, 2007). Such reserve forest policies in Bangladesh, according to Adnan (2004), decreased yields due to a reduced *Jhum* cycle and shortage of land for shifting cultivation. The result was that many people faced food crises, which in turn, led them to be exploited by the Bangladeshi mainstream moneylenders. Adnan (2004) also argues that Indigenous communities’ land rights and their access to traditional land, animals, plants, and trees, were ignored issues in reserve

forest management policies. For example, 17.49% of Bangladesh's total land area is forest land, and with more than 27% of that forest is situated in CHT. Bangladesh's state geographic boundaries between plain and mountain landscape have declared more than 60% of the Indigenous cultivated land to be reserved forest and unclassified land (Mukul, Uddin, & Marzan, 2008; Schendal et al., 2001). In the CHT, the colonial "government had reserved over one-fourth of the area of the district as closed forests in which no cultivation is allowed" (Hutchinson 1909 cited in Schendal et al., 2001, p. 128), which significantly affects the livelihoods and cultures of Indigenous communities.

The land-management initiatives of the Bangladeshi state has also forced Indigenous people of the CHT to change their survival strategy through adaption (Adnan & Dastidar, 2011). The state's land-management initiatives include forest management for profit, which allow commercial companies like oil and gas, tobacco, construction, and illegal logging to conduct business on Indigenous land (Moshin, 2002). Adapting to these practices has affected Indigenous traditional culture, customs, and their relationships with the environment (Adnan & Dastidar, 2011). For example, Indigenous farmers are now forced to cultivate more marginal lands for growing food and cash crops, and to cultivate more frequently (Adnan, 2004).

Unfortunately, not only have the colonial and neo-colonial states' land management practices that have claimed to promote progress and alternative land use over Indigenous land practice largely failed, but policies on the CHT Indigenous land have been widely criticized for their uneven development projects (Adnan, 2004). As the literature has shown (Adnan, 2004; Roy, 2000), the results of colonial and neo-colonial land-management strategies have challenged Indigenous sustainable land-management strategies and have remain a challenge for Indigenous communities to this day.

Neo-colonial Management Development Projects, Environment Degradation, and Violence

The CHT Indigenous land-management practices of their forest and cultivated land have been challenged through various development projects by the Bangladeshi state (Adnan, 2004). Such projects have led to rapid population growth in the area, as well as incentivised, tobacco cultivation, commercial horticulture, overfishing, commercial forest plantations, illegal logging, industry and manufacturing, Brickfields, and new transportation incentives. Chakma (2010) proposes these projects have not only enforced the destruction of the CHT Indigenous environments, but also contributed to the exclusion of Indigenous traditional land-based experiences as under-developed and backward sources of knowledge (Chakma, 2010). Therefore, it is significant to discuss how these development projects have been associated in the name of land-management with environmental degradation and violence in the CHT Indigenous communities.

One of the main outcomes of these development projects has been rapid population growth in CHT Indigenous land, which has begun to affect the viability of traditional cultivation (Adnan, 2004). This project was officially promoted during 1975-1985 through the Bangladeshi government's settlement strategies, which transferred more than 400,000 outsiders onto limited CHT land (Adnan, 2004). Adnan shows from a 1991 data set that due to overpopulation, soil fertility decreased by 50% between 1971 and 1985. A similar study by Chakma (2010) shows that recent CHT soil fertility decreased by 80%, through either over-cultivation or commercial logging. For this resettlement project, Adnan (2004) argues, that increasing population in CHT has pushed hundreds of thousands Indigenous people into poverty.

Another development project promoted by the Bangladeshi state is tobacco cultivation in the CHT, which has had other significant and negative influences on Indigenous land practices (Adnan, 2004). This project is funded by a multinational mixture of corporations and government, such as British American Tobacco and Virginia Tobacco. The main target of the agencies was to gain profits from the land (Adnan, 2004). Adnan (2004, 2011) states that under the Bangladeshi government's environment project, these companies have been associated with promoting deforestation and planting tobacco fields in the CHT.

The CHT Indigenous land management practices have also been enormously affected through the Bangladeshi state's Reserve Forest (RF), Protected Forest (PF), and Unclassified State Forest (USF) (Mohsin, 2002; Roy, 2000). The RF and PF, which contain natural forests, timber plantations, and deforested land, are controlled by the government's forest management programs. The USF, which contains cultivated land, grazing lands, common village forest, and other kinds of necessary land, is controlled by the state as well. Adnan (2004) and Mohsin (2002) explain that in such forest management policies, there is no land owned by the Indigenous people. Indigenous peoples' original land rights have been transferred into state property through the classification and confiscation of these various forest lands.

Mainstream transportation and market systems are also threatening issues for Indigenous land management practices (Adnan, 2004). Transportation and village markets in many Indigenous villages have been promoted for the benefit of mainstream people as these have been constructed according to outsiders needs (Adnan, 2004). Roads, Schendel et al. (2001) state, have increased opportunities to transport Indigenous forest woods, timbers, and other resources by outsiders outside of the Indigenous land. Studies by Chakma (2010) and Schendel et al. (2001) show that Bangladeshi state's transportation and village market

strategies have also opened Indigenous land to outsiders' manufacturing companies, business persons, and oil and gas companies.

Indigenous land-management have also been affected through the Bangladeshi government's use of co-management (Roy, 2000). Studies by Adnan (2004) and Rasul (2007) show that the concept of 'co-management' was mainly created to promote collective management by Indigenous farmers; however, in practice, it has mainly been run by outsiders such as mainstream educators, market developers, roads contractors, and outside fisheries. Co-management, Thapa and Rasul (2006) argue, creates forests policies where new plantations are given priority over the traditional land practice. Thapa and Rasul (2006) also explain that there are a number of co-management forests run through collaborative engagement where Indigenous people and their traditional experiences have been seriously overlooked.

Neo-colonial development projects by the Bangladesh and Pakistan governments have also promoted various kinds of violence in Indigenous communities (Roy, 1996). This violence has included displacement, murder, rape, forced labor, and so on (Adnan, 2004; Rasul, 2007; Roy, 1998). Such violence, Adnan (2004) states, has been led by mainstream settlers, with Bangladeshi government and military support, including "communal riots, arson attacks, physical violence, as well as full-blown massacres during the counter-insurgency period" (p. 96). Starting in the 1980s and 1990s, rape and other violent acts committed against Indigenous women were used (and continue to be used) as a mechanism of pressuring Indigenous families and communities to leave their cultivated and traditional land (Chakma, 2010). The CHT Indigenous women have been used "as mechanisms of pressurizing their families and communities to leave a particular locality, enabling settlers to grab their land," especially

between 1981 and 1985 (Chakma, 2010, p. 97). Violence toward Indigenous people and their land have become a tool for land-management.

CHT Indigenous scholars' studies (e.g., Chakma; 2010; Roy, 2008; 2000) show that violence toward Indigenous people has also become a serious issue due to forest development projects in the CHT. For example, due to the reserve forest policies during the Bangladesh period (1971-present) "mainstream government banned the traditional practice in their (Indigenous people of the CHT) land" (Mohsin, 2002, p.112). Adnan (2004) similarly states that "approximately 100,000 Chakma Indigenous people (along with 11 other Indigenous communities) were forced off their land... 8000 *Jhumma* (swidden) cultivating families" were directly affected and violated by state forest management policies in both the Pakistani and Bangladeshi state regimes (p. 44). Furthermore, Petro-Bangla and Shell Oil companies' land logging projects in 1981, used 5,250 square miles of land without Indigenous consent (Adnan, 2004). This project has left behind serious impacts on the CHT environment, including decreasing the quality of drinking water and destroying the animal habitat. As these examples show, the government of Bangladesh creates ongoing conflicts in the CHT region through its forest policies (Chakma, 2010; Rasul, 2007; Roy, 1998).

Insurgency and conflict are also forms of violence created by the neo-colonial Pakistani and Bangladeshi nation states in the CHT (Chakma; 2010; Mey, 1984; Roy, 2000). On one hand, the insurgency is necessary to the CHT Indigenous people in order to save their ancestors' land, their traditions, animals, plants, and spiritual relationships. On the other hand, the insurgency has been identified by the state government as an anti-developmental, anti-nationalist, and terrorist activity (Mohsin, 2002; Roy, 2000).

To conclude, Indigenous meanings of land use and their relationships with the land, animals, and other parts of their communities have been deliberately threatened by state forest development projects and alternative land-management policies in the CHT (Assies, 2009; Roy, 2000; Thapa & Rasul, 2006). Such development projects have brought several negative impacts on the CHT Indigenous communities and their environment, including increased violence, increased poverty and unemployment, increased insecurity, privatization of Indigenous land by outside groups, increased illegal logging, deforestation, and the extinction of several species. Adnan (2004), Mukul et al. (2008), and Roy (1998, 2000) argue that misconception of management, land, and sustainability have led to the loss of Indigenous culture and identity, and have increased threats to animal, plants, and the ecosystem as a whole. Exploring meanings of land, management, and sustainability from the local Indigenous practice has remained a significant gap in the state's land management policies which involve the CHT Indigenous communities (Adnan, 2004; Assies, 2009; Mey, 1984; Roy 2000).

Theoretical Framework: A Relational Ontology

To explore the meanings of land, management, and sustainability in Indigenous communities, this research framed by a relational ontology. This framework suggests that actors, (actors can be human and non-human, living and non-living) are materially and spiritually connected through interactions with each other. Such a relational ontology not only challenges fixed meanings of actors, but it also makes actors responsible for their actions (Wilson, 2008). A relational ontology also challenges our fixed ways of knowing, doing, and acting by including traditional experiences and everyday practices as significant sources of knowledge. For this reason, I explored a relational ontology as a conceptual theoretical framework for exploring meanings of land, management, and sustainability in the Laitu

Khyeng Indigenous community, particularly through concepts such as relationality, hybridity, otherness, and scientific knowledge.

Relationality. A relational ontology puts relationality at its center. Actors-human-and non-human, living and non-living- and their actions are not only explained as relational, but also as spiritually interconnected, which makes one actor responsible to the other actors (Ingold, 2011). Ingold (2011) explains that spirituality helps in understanding actors relationships with other actors (p. 29). He thinks actors, and as such, various species and organisms, including humans, have ‘sticky’ relationships. ‘Sticky’ can be explained as multidirectional interconnectedness, rather than fixed relationships. Actors and their actions cannot be fixed, limited, or attributed with any qualities. According to Ingold, an actor’s actions are complex and diverse within multiple relationships.

Deleuze (2004) defines actors differently from Ingold. Although Deleuze’s understanding of actors is also relational, he argues that an actor acts by the line of flight or the line of becoming (Deleuze & Guattari, 2004). According to Deleuze, actors follow their own lines of interaction. His actors’ lines determine who the actor is and with whom they are interacting. Actors, as Deleuze explains, are not fully dependent on other actors. However, according to Ingold, an actor neither follows Deleuze’s line of flight, nor is an actor fixed with any accuracy. Both Ingold and Deleuze have focused on the relationships between actors in order to explain actors and their actions. However, their definitions still contain questions such as how an actor is inspired to interact with another. Ingold, on one hand, considers things as actors who have material and spiritual influence within their interactions. On other hand, he does not explain much in the way of *why* actors interact with other actors. Nor has Deleuze explained how an actor can follow its own interest while interacting with other actors.

However, in developing a relational ontology, both Ingold and Deleuze are helpful in explaining actors' relationships.

To overcome Ingold's and Deleuze's gaps, Latour's (2000) primary and secondary qualities can be helpful to explore actors' interactions. Primary qualities are described by Latour (2000) as physical attributes such as land, plants, species, human bodies, atoms, genes, and so on, whereas secondary qualities are identified as spirituality, relationships, feelings, smells, and interactions. To understand the actor, according to Latour, we cannot make a separation between these primary and secondary qualities. An actor's actions need to be considered as interconnected physically and spiritually. Latour's primary and secondary qualities are not two stories; rather they are complexly related. An actor's interchangeable characteristics transform the actor into a context in which the actor can be changed, moved, reflected, and becomes more complex. Latour (1991) shows that actors, human and nonhuman, are relational in terms of "variable geometry" (p. 116), a term he uses to explain the instability of an actor. Hence, I suggest a relational ontology neither considers actors as fixed nor rejects actors as non-actors. Like Latour, I believe a relational ontology questions not just our idea of action, but also our idea of actors.

Moreover, Latour's standpoint, based on the Actor-Network- Theory (ANT) that he helped to develop, is that an actor cannot be understood as free and autonomous. Latour's ANT also challenges our fixed ways of knowing what counts as human and nonhuman without adding other actors, such as plants, animals, and other species, as actors. His ANT considers humans and nonhumans to be equal actors. However, Latour's (1999) extraordinary work is not unproblematic for balancing tendencies among human and nonhuman actors. In a relational

ontology, actors do not maintain balance while they are interacting; rather, they are spiritually connected with each other (Whatmore, 2002).

Relationality can also be explained through Escobar's (2011) "pluriverse studies" (p. 139). His pluriverse is an open relational worldview where a single actor can be transformed to multiple actors. There is no single notion of meaning, actor, story, knowledge, civilization, or discipline. Escobar (2011) argues that "relational ontologies are those that eschew the divisions between culture, individual and community, between us and them that are central to the modern ontology" (p. 139).

Therefore, actors, including their actions and meanings, can be understood in terms of diverse and continuous relationships. Defining relationality in a relational ontology through the contributions of Deleuze, Ingold, Latour, and Escobar is not only useful for eliminating dualism between management/culture, mind/body, humans/nonhumans, and science/society but also for reconsidering 'things' with new meanings.

Hybridity. Hybridity is another significant characteristic for exploring a relational ontology (Whatmore, 2002). A main researcher in the development of the concept of hybridity is Bhabha (2004); with his concept of hybridity challenges colonial fixity and rigidity. For Bhabha, hybridity takes meaning as a continuous process, which disobeys any colonial fixed authenticity. Hybridity, according to Bhabha (1985), uses a process of "the necessary deformation and displacement of all sites of discrimination and domination" (p. 154) by challenging any fixed authenticity or fixed meaning. Through the concept of hybridity, Bhabha questions our clear sense of authenticity in distinctions and dichotomies such as management/culture, humans/nonhumans, traditional/modern, and so on (Bhabha, 2004). The clear distance between self and other becomes ambiguous. He explains, "the voice of command

is interrupted by questions that arise from these heterogeneous sites and circuits of power ... the paranoid threat from the hybrid is finally uncontainable because it breaks down the symmetry and duality of self/other, inside/outside” (2004, p. 161). Bhabha’s hybridity neither separates nature and culture nor inside and outside; rather, hybridity is a way of becoming through complex relationships. Thus, Bhabha’s definition of hybridity is beneficial -in a relational ontology- for understanding meanings of complex relationships as forms of becoming, rather than as fixed being.

Hybridity as taken up in a relational ontology can also be explained by hybrid space, a concept articulated by the well-known geographer, Whatmore (2006, 2002). Like Bhabha’s ideas, Whatmore’s hybrid space not only considers that actors are interconnected actors, but also that they are “the condition of immanent potentiality that harbours the very possibility of their coming into being” in a fluid sense (Whatmore, 2002, p. 161). Whatmore uses hybridity to understand not only relational being, but also relational *becoming*, while her fluid sense of hybridity can be used in a relational ontology for understanding the fluidity of things. Fluidity refers to various ways of becoming. For example, land can have various identities, such as god, animal, woman, man, etc., in its complex relationships with other actors. Thus, a hybrid sense of actors and their actions can have multiple interdependence meanings.

I suggest a relational ontology, which is complex and continuous in relation to hybridity. Hybrid meanings of actors are a web of collective interactions and heterogeneous ways of becoming. Hybridity has the ability to undermine western fixed meanings (Haluza-

Delay, et al., 2009). It situates things as radically antiessential⁵ (Escobar, 1999). Meanings and identities are considered effects, rather than causes.

Otherness. Relational ontology refuses hierarchical relationships among actors. According to Said, (1993) otherness is a colonial idea, which positions one actor as inferior. Otherness undermines local people and their everyday practices as *less* significant. Said argues in *Culture and Imperialism* (1993) that hidden colonialist assumptions undermine local-based practices. One example is in the Jane Austin novel *Mansfield Park*. The sugar plantation project makes local people others on their own land, creating class and gender partiality by, dividing men/women, colonizers/colonized, and white/non-white. Instead, Said explicitly refuses to consider the actor as other and moves to a ‘we’ - which is able to breakdown fundamental aspects of self and self-authenticity. He explains ‘othering’ as a force or violence. The term ‘other’ or ‘they’ is not like the term ‘us’. ‘Other’ suggests separation and dependency. The term ‘we’ is relational and therefore suggests more equal opportunities. Therefore, in a relational ontology Said’s concept of ‘otherness’ remains a significant tool for deconstructing colonial and neo-colonial development and management approaches to power practices in Indigenous communities.

Scientific Knowledge. Using relational ontology Indigenous traditional land management experiences can be considered a significant source of scientific knowledge. Such a framework sees both “science” and “traditional experiences” as valid forms of knowledge. Science, as defined by Levi-Strauss (1968), is a new system of knowledge; similarly, he defines traditional experiences, such as mythical experiences, as new forms of knowledge as well. He argues that traditional experiences, like science, can lead to future prediction. For

⁵ *Antiessential* is used for a process of rejection of any permanent meaning. It is a process of recognizing various forms of knowing (Escobar, 1999).

example, if a plant is found to be poisonous, people might become cautious to use this specific plant; though time, storytelling and such, this observation can become a myth that functions to avoid danger in the future. Therefore, Levi-Strauss sees that both a new scientific system of knowledge and a traditional mythical knowledge can be used to generate knowledge. He argues if both mythical thought and scientific knowledge refuse “absolute” tendencies, they can make new possibilities (p. 19). Levi-Strauss critiques positivist and post-positivist disciplinary truth making for their tendency to be situated outside of societal realities. I suggest that using relational ontology in this research will, like Levi-Strauss, reject any absolute ways of knowing.

In exploring a relational ontology as my theoretical framework, concepts of relationality, hybridity, otherness, and scientific knowledge are significant for several reasons. They lead me to understand actors as having agency in transforming impossibilities to possibilities. Actors and their actions have the power of “re-conjugating, re-contextualizing, translating the event into the politics of communities” (Michell, 1995, p. 114), and I understand them to be both unstable and capable of different ways of becoming.

Hence, by drawing on Ingold, Deleuze, Latour, Bhabha, Whatmore, Said, Lavi-Strauss, and others in my investigation of meanings of management, land and sustainability, I suggest that we need to: abandon the narrow political ideas that meanings only apply to particular humans group; confront all fixed meanings by exploring our everyday practices; and reconfigure not only the definition of actor but also the actors’ actions in terms of spiritual relationships, local culture, and traditional experiences. Thus, I suggested that a relational ontology used as the theoretical framework, in this study, in order that meanings of land management are considered not in opposition to development and government land-

management, nor as their complement, but as holistically, from multiple local relationships, and as a continuous process.

Meanings of Management, Land, and Sustainability

It is important to discuss critically how a relational ontology can be used to explore the concepts of management, land, and sustainability in Indigenous communities. Therefore, I review how a relational ontology considers meanings of land based on everyday relational practices. I then reviewed how a relational ontology considers meanings of land based on everyday relational practices. Finally, I critically examined how the concept of sustainability has remained economically biased, and how a relational ontology leads us to consider new meanings of sustainability.

Land. I proposed that a relational ontology understandings of land as connected with people's everyday practices and as a hybrid space, which involves multiple relational practices. In exploring meanings of land, Ingold's (2011) concepts of *life* and *room* are helpful. He explains that *life* is lived and opened instead of structured and fixed. On the other hand, *room* "affords scope for growth and movements" (p. 147). Land as a form of the *room* does not have modern boundaries; it does not have walls but only vast ground, and it does not have roofs but only open sky. Ingold (2011) thinks, "the idea that places are situated in space is the *product* of this inversion, and is not given prior to it" (p. 147). Ingold considers land in our everyday practices as open space where things become actors. The land is not fixed; land is an actor, which is able to influence our actions but also our ways of becoming. Therefore, the meaning of land can be understood, according to a relational ontology, as the movement of relationships.

Land as an object, in a relational ontology, is not important; rather, what is important is its relationship with other actors. Land engages humans and nonhumans in ways that show how

actors are spiritually connected with one another. Considering a relational ontology, Wainwright and Barnes (2009) argue that land is a transfixing and dynamic spatial flow of interactions. Thus, in understanding meanings of land relationships are fundamental. Once humans and nonhumans are connected with land in their everyday relational practices, meanings are co-constituted as a totality. Land becomes relationships, culture, and spirituality where humans and nonhumans connect in their everyday interactions. Wainwright and Barnes' (2009) understanding of land is highly reflected in the multiple Indigenous meanings of land, where implications of land are considered holistically, dynamically, relationally, and continuously (Nelson, 2006), being connected to people, animals, trees, plants, dreams, and spirituality.

The land is a symbol of respect in many Indigenous communities, which strongly differs from the western fixed sense. For example, Bloch (2008), a non-Indigenous scholar studying within Indigenous communities, argues that Indigenous people are emotionally and spiritually connected with their places, forests, and houses. He shows that in the *Zafimaniry* community in eastern Madagascar, land, just like the sun and the sky, is seen as a 'god' who takes care of them. Bloch shows that the relationship between people and the land and gods is respectful, which makes humans responsible actors. Further, the meaning of house is not only a place to live but also a symbol of respecting, blessing, and connecting with ancestors. A house's different parts have different meanings. For example, the hardest wood is associated with a man's marriage and a cooking pot or a large wooden spoon is associated with women's marriage. A single house transforms to a holy house and center of the village. The *Zafimaniry* community's reproductive success and social success are attached to their land as well, while *Zafimaniry* strength, political power, and different ways of being may not be explainable

without explaining their relationships with the land. In a similar contemporary example from the *Kissa* Indigenous community from the Republic of Guinea, Fairhead and Leach (1997) show that the *Kissa* community's everyday practices, their identity, political relationships, women's fertility and the political ecology of the forest are connected with their traditional experiences and relationships with trees. There is no way to ignore the language of trees in their forest management. Their traditional experiences with trees and forest lead them to interact with or manage their forest and their everyday life. Hence, meanings of land are not limited with fixed boundary in many Indigenous communities.

Management. I proposed that a relational theoretical framework critically examines the general colonial concept of management. Studies (Lertzman, 2010; Lertzman & Vredenburg 2005) found the western and Indigenous meanings of 'management' fundamentally carry different meanings stemming from different worldviews with differentiated philosophies, practices, and methods. Dudgeon and Berkes (2003) suggest that the western and Indigenous understanding of management in many Indigenous communities are ontologically contradictory, owing to differing worldviews, practices, and methods. Therefore, to explore meanings of management in relation to a relational ontology, this section will first critically examine western fixed meanings of management and second, explore meanings of management from local culture, which moves beyond Western fixed meanings.

The western understanding/knowledge of management tends to focus on technique: this idea of management not only subsumes Indigenous knowledge of management; in many regions it also considers Indigenous knowledge as illegitimate (Nadasdy, 2003). Escobar (1995) explains Western management knowledge "relied exclusively on one knowledge system, namely the modern Western one. The dominance of this knowledge system has

dictated the marginalization and disqualification of no Western knowledge systems” (p. 13). Nadasdy (2003) states that western meanings of management take “for granted existing power relations between aboriginal people and the state by assuming that Indigenous knowledge is simply a new form of ‘data’ to be incorporated into already existing management bureaucracies” (p. 15). First Nations scholars Battiste and Henderson (2000) take this further, arguing that attempts to define environmental management systems are inherently colonial, based on a Eurocentric need to categorize and control.

The concept of management has not changed from colonial perspectives in the neo-colonial era, leaving numerous unjust forest development projects in many parts of the world unchallenged. Gomes (2004) gives an example from the *Semai* Indigenous community in Malaysia (known as *Orang Asli*) to show how the state has largely used a fixed scientific concept of management to control the *Semai*’s local resources. The government’s management tools, envisioning development as the only way forward, became fixed, while ignoring *Semai* Indigenous traditional practices as “backward,” “traditional” or useless (Gomes, 2004, p. 2). In order to enhance ‘development,’ Indigenous people have been forced to use new modern technology over their traditional practices; Gomes argues that the technological development project was mainly for state and outsider profit. The management model has not only undermined local land relationships, but has also led to land alienation and identity crisis in the *Semai* Indigenous community. Therefore, meanings of management in the *Semai* Indigenous community have not only remained artificial but they have also become exploitative. Hence, I refuse to use my relational ontology to consider management as something fixed or with a single meaning (Law, 2004).

In contrast, the Indigenous knowledge in terms of environmental management extended from a community-based and decentralized prioritized of resource management (Bunnell 2008; Butt & McMillan, 2009). For example, Article 8 of the Convention on Biological Diversity explains Indigenous environmental management as “respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity” (United Nations, 2013). In this point, Berkes (2003) explain that Indigenous environmental management knowledge has been rediscovered as a model for a recognition of their land rights, identity, interests, a healthy interaction with, and use the environment in order to gain new perspectives about the relationship between humans and nature. Dudgeon and Berkes (2003) explain that Indigenous ways of understanding management are oriented according to Indigenous traditional ways of knowing, practicing, and informing cultivation culture on their land. Indigenous scholars Battiste and Henderson (2000) see Indigenous management as a mode or component order: its great diversity is a reflection of ecological diversity.

Thus, I suggest a relational ontology, which will consider meanings of management as part of everyday culture. Parkin (1997) shows in the West Bengal India Hindu community that the tree is a powerful actor in understanding human lifestyles. The tree has the power to change a person’s social status, their identity, and their relationships. For the community Parkin is studying, the meanings of the trees are complex relationships, which can play significant roles in everyday practice. Trees are not only objects or symbolic metaphors but also material actors who have the ability to interact in everyday practices. For example, the notion of a ‘marrying’ tree can break down the western sense of the nature-culture dichotomy. Men and women in the West Bengal India Hindu community, for instance, cannot get married to a person without

marrying other actors. Marriage with actors, such as trees, tokens, pots, the sun, rocks, a mountain, and so on, not only shows a new sense of actors but also shows different implications of actors. Interacting with or marrying is meant to increase fertility among humans, plants, animals, fish, and so on. Therefore, Parkin (1997) explains, “not only people but also the gods, the sun, and the moon - and even fishing nets and hunting weapons - are ritually ‘married’, otherwise they will be of no use” (p. 55). Marriage, he argues, is not only a social status or a fertility ritual leading to childbirth, but it is also a process of reconnecting with land. ‘Actors’ such as trees, land, and rocks live, have souls, and are active aspects of everyday life. Similarly, non-Indigenous scholar Brightman (1993) who studies the *Cree* Indigenous community in Canada, shows spirituality plays a significant role in understanding the interaction of Indigenous people. Brightman shows a semiotic relationship between *Cree* people, arguing that “Crees conceive themselves simultaneously as hunters of animals and as the prey of monsters who are the hunter of humans” (p. 136). A dreamer uses magical power to kill *witikos*, those who do not care for others. Through spiritual relationships with animals, *Cree* people become responsible, powerful, and self-sufficient. Spiritual relationships with animals not only protect *Cree* from food crises but also save the animals in their territory. Thus, management has diverse meanings in a relational ontology.

Through a relational ontology, I argue that we not only need to deconstruct our western static vision of management but we also need to move forward towards reconstructing meanings of management from people’s experiences. Acknowledging Escobar (2008, 2010, 2008), Latour (2000, 2004), and others, I support management as a dynamic concept that requires critical understanding. In exploring meanings of management in Indigenous communities, we need to gather the knowledge of spiritual and relational experiences beyond

western disciplinary boundaries, and other ideas that narrow our vision. I suggest that a relational ontology, therefore, will consider multiple realities, relationships, and interactions based on our traditional knowledge, leading us from colonial fixed concept of management to a relational concept of management (Escobar, 1996, 1999, 2011; Ingold, 2011).

Sustainability. A relational ontology can be used to question fixed meanings of management policies and instead, define management in terms of sustainability. It can challenge not only management development projects' fundamental goals (e.g., economic growth) and outcomes (e.g. othering) but also any fixed authority over local people's spiritual and relational practices. Relational ontology stresses meanings of sustainability as situated in practice, critiques, and anti-developmental stances, which consider relational practice as the center.

I suggested through a relational ontology that traditional experiences and spiritual relationships have significant influences on meanings of sustainability in Indigenous communities. Therefore, meanings of sustainability in a relational ontology move beyond the dualism of science or social science. Meanings are processes of understanding the “value of traditional and neo-traditional or otherwise local resource management” (Folke, Berkes, & Colding, 1998, p. 43). Considering traditional experiences and spiritual relationships as significant sources of knowledge in exploring sustainability not only make us responsible for our actions but also create critical space for ‘re-imagination’ for others to consider these actors as relational. Payre (2009) argues, hence, sustainability is “being for others, rather than being for self” (p. 318).

Sustainability not only connects humans and environments, but it also creates many possibilities in rethinking practices. Escobar (1999) argues that “sustainability cannot be

defined independently of the specific ecological, cultural, technological, and economic conditions of the appropriation of management,” - rather a sustainability stands as holistic (p. 26). Similarly, Agyeman, Bullard, and Evans (2003) explain sustainability as “just sustainability” (p. 324). These views challenge dominant management development paradigms, which have a strong tendency to favor development, to ignore others, and to disassociate human and place relationships. Likewise, Davison (2008) argues that sustainability is an interaction between normative claims and practical concerns in creative change and open-ended dialogue. Sustainability, as hybrid spaces that are lived within [what Whatmore (2006) calls *livingness*], models the connection between all bodies. *Livingness* redirects material concerns: “thing-ness of things’ - bodies, objects, arrangements - are always in-the-making and ‘humans are always in composition with non-humanity, never outside of a sticky web of connections or ecology” (p. 603). New meanings of sustainability create different alternatives of practice when they suggest that all things have agency, and this is associated with the practice. Sustainability as livingness or practices shifts our thinking from cultural geography’s self-consciousness phenomena “I think therefore I am” to one of “*I think therefore I act*” (Whitemore, 2006, p. 603). Livingness or practice based understandings relocate social agency in various ways. Meanings of sustainability in a relational ontology can be defined as following:

A cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment. (Berkes, 1999, p. 8)

Therefore, sustainability can be understood for exploring land-management as offering a “*different way of imagining life.*” (Escobar, 2011, p. 139). Sustainability is respectful of

relationships, expectation, daydreams, and spirituality, which enable us to imagine (Escobar, 2010; McKenzie, Hart, Bai, & Jickling, 2009). Drawing on diverse collective understandings, I suggest sustainability is an ongoing process that is linked to, our imagination, dreams, and spirituality. Understanding meanings and implications of sustainability as practice-based, complex, critical, and as an ongoing process can not only engage us in a complex conversation of sustainability but also create space for our dreams, imagination, and spirituality to enter in our everyday eco-practice.

In sum, I intend to use a relational ontology in my research that implicitly leaves behind all prioritizations, which are involved in modern dualistic thinking. Meanings of ‘actors’ neither work with predetermined relations, nor should they involve hierarchy. Rather, in using relational ontology as my conceptual framework, I suggest meanings of ‘actors’- such as land, management and sustainability- as hybrid processes, which are continuously shifting, changing, moving, transforming, assembling, and becoming more complex. Such a relational ontology calls on our every day, practice-based understandings to deconstruct our pre-existing ideas of land, management, and sustainability. This reconfiguring of the meanings of actors and their material agency will be an ongoing process, one which critically examines power relations, uneven history, and globalization.

Outline of Remainder of the Document

In this chapter, I have outlined the differences between Indigenous traditional land management and colonial and neo-colonial government land-management policies. I explained on the one hand, how local Indigenous people interact with their land in their everyday life; how they are connected to each other, animals, plants, and the lands; and how their spiritual relationships with the ecosystem influence their everyday decision making practices. On the

other hand, I critically explored colonial and neo-colonial meanings of management, land, and sustainability through various land management projects. In the second part of this chapter, I explained a relational ontology as one that not only deconstructs our fixed vision regarding actor and actor's actions, but also moves us towards a better understanding of our complex interactions. Such a relational ontology prepares us to understand multiple realities, relationships, and spirituality based on our everyday practices. The reminder of chapter three outlined the details of collective research design, including methods of data collection and analysis.

CHAPTER THREE: METHODOLOGY AND PROCEDURES

Research methodology greatly influences both research and research outcomes. In order to explore and situate my research, it is important to discuss my methodology, including its key issues and challenges. Here I discuss why I chose participatory action research (PAR) as my research methodology, including how it complements a relational theoretical framework and my cross-cultural identity as a relational researcher. The research protocols that will inform this study will also be discussed.

Participatory action research (PAR) as a methodology is unique from other research approaches because it reflects a relational ontology in several ways (Baum, MacDougall, & Smith, 2006; Glass & Kaufert, 2006; Hale, 2006; Herlihy, 2003). First, PAR is a process of empowering participants by respecting and giving importance to participants' thoughts, experience, and spirituality (Blodgett, Schinke, Smith, Peltier, & Chris, 2011). Second, PAR is a collaborative process where participants and researchers both benefit. For example, PAR research methodology is helpful in providing researchers with insight into participants' needs, values, and customs; it also improves community capacity, creates critical understanding for self-consciousness, and it increases community-based participation and social action outcomes (Hall, 2005). Finally, PAR is accountable to the participants. For example, Creswell (2007) argues, a PAR is for both participants and the researcher.

Participatory Action Research (PAR) Methodological Framing

Participatory action research (PAR), as a relational ontology is respectful to "Indigenous knowing/knowledge" (Datta, et al., 2014; Dei, 2011, p. 3), while recognizing that non-Indigenous scholars cannot access or work with Indigenous perspectives (Kovach, 2009). Using PAR, a western methodology, in Indigenous research can be a challenge. Western

methods have often ignored Indigenous participants' spiritual relationships and traditional experiences as sources of research knowledge (Kovach, 2009; Smith, 1999; Wilson, 2008). Indigenous scholar Kovach (2009) raises critical views of western methods of PAR that can undermine Indigenous knowledge by systematic coding systems. In order to overcome these challenges, Indigenous scholar Battiste (2000) and Wilson (2008) refer to PAR as an approach that can be used for Indigenous research if researchers have empathy for their participants and aim to be accountable to Indigenous communities in their research. As a non-Indigenous researcher, I used the PAR approach from a relational framework, which epistemologically challenges and deconstructs stereotypes, notions of unified voice, and authentic western fixed ways of knowing (Stoecker, 2013). I am not arguing that there is only one way to interpret Indigenous relational meanings of life and relationships, but rather that a PAR approach embraces diverse ways of knowing and takes a serious position to avoid unconscious and uncritical imposition of Western authentic otherness. Indeed, PAR in this research, according to Wilson (2008), tried to understand participants' relationships "rather than treating participants only as source of research data" (p. 177).

The researcher's main accountability in a PAR methodology is to honor participants' spiritual relationships and holistic worldviews, as well to demonstrate reciprocity (Wilson & Pence, 2010). The researcher's responsibility is to be actively engaged in giving voice to marginalized, silenced, and ignored communities. Similarly Ferreira and Gendron (2011) argue that when conducting research with Indigenous communities, the researcher needs to consider each participant's knowledge respectfully and as significant; in fact, researchers using PAR may want to consider each participant as a "co-researcher and co-learner" (p. 157).

Researcher's accountabilities open possibilities for participants the predictability (Cresswell, 2007). Thus, positioning researcher is research vital for PAR (Wilson, 2008).

Situating Myself as Researcher.

“Locating oneself is important to knowledge production and validation. It is also crucial for how a text/discourse is read, understood, and interpreted. Personal location contributes to the production of meanings” (Dei, 1999, p. 397).

In exploring the questions set out in this thesis, I must clearly acknowledge my socialization, identity, education, and professional experiences in order to understand my participatory action research (PAR) ontology and epistemology in relation to my relational theoretical framework. Scholars such as Backer (1967), Ferreira and Gendron, (2011), Meyer (2001), McCarthy and Moje (2002), and Smith (1999) argue that a researcher's responsibilities are to conduct significant research rather than to acknowledge their personal identity; although I agree that researchers should conduct meaningful work, they should also acknowledge that who they are will affect the processes and outcomes of their research. Similar to Mead (1934), I think a person's mind, self, and society construct relations and acts relationally. Mead goes on to argue that people act and think according to their socialization. Therefore, Torre and Ayala (2009) argue, it is the researcher's responsibility to make space rethink their identity and challenge ways of being. Asking “who am I as a researcher? is an important issue for conducting research within Indigenous communities (Smith, 1999; Wilson, 2008).). I agree with Wilson (2007) as he suggests that research knowledge cannot be separated from who we are as researchers and what we are doing. Research is about exploring relationships “with our environment, families, ancestors, ideas and the cosmos around us

[which] shape who we are and how we will conduct our research” (p. 194). Therefore, a researcher’s identity is important for their research.

My cross-cultural identity, such as my socialization, relationships, education, and professional experiences, is important to discuss who I am as a researcher. I was born into and grew up in a minority⁶ family. Minority communities have many difficulties in decision-making processes in my nation-state, a nation-state which is deeply associated with a particular Islamic religion (Mohsin, 2002). Minorities, including Indigenous communities, have been regarded as an under-class (Adnan, 2004; Mohsin, 2002). Like Indigenous communities, my community people are well acquainted with the meaning of oppression, mainstream negligence, and economic hardship from the mainstream nation-state and mainstream community (Roy, 2000). Being part of a minority community, I have seen how my family struggled in our everyday life for production and cultivation, land rights, and education (Human Right Congress for Bangladesh Minorities report, 2013; Iva, 2010). A number of questions remain for me: Why have we been displaced from our motherland? And why do we not have land rights in our ancestral land? Our minority identity has made our lives, like those of Indigenous communities, vulnerable in our own land (Internal Displace Monitoring Center Report, 2009). As minority citizens, we always feel that our lives are not our own. My experiences have led me to do this research in order to find a space for reclaiming our collective land rights. In fact, in terms of everyday oppression, as part of a minority who has

⁶ I use the term *minority* here for indicating non-Islamic communities’ people such as Hindu, Buddhist, Christian, and various Indigenous communities (Human Right Congress for Bangladesh Minorities report, 2013). Minorities face many difficulties in equal land rights, policy making, and education in Bangladesh (Human-Right Watch Report, 2011). Minorities are often displace from their original land, oppressed in their everyday practices, and excluded from any kind of major decision-making process in relation to their land (Internal Displacement Monitoring Centre Report, 2015; Iva, 2010).

been displaced from their original land by the mainstream, my community and many Indigenous communities are not so different. Therefore, this research is a part of our collective struggle and a political stand.

Like those who are a part of an Indigenous community, my socialization was also different from the mainstream community. I was male person in a nation that favors a patriarchal system; however, I grew up in a maternal family structure. This is important to me, as the male-biased nation state does not recognize a maternal family structure. Women are excluded and considered second-class citizens in many decision-making processes. As the head of a family, a woman has to face many difficulties in her everyday life (Kabeer, 2000, 2011). Since my father passed away just after I was born, my mother and sisters assumed the roles of decision makers, like in many Indigenous communities around the world. My upbringing has enhanced my understanding of different ways of socialization as processes such as those common in Indigenous communities in the Chittagong Hill Tracts (CHT).

I refer to my identity as cross-cultural because of my interdisciplinary education and experiences. My first university degree was in Sociology at Shahjalal University of Science and Technology in Bangladesh. My Masters was in Criminal Justice from Monmouth University, in the USA. Recently, I completed my course work in Environment and Management policies at the University of Saskatchewan, Canada. During my studies I have completed several courses and done research work in various disciplines such as Foundational Education, Anthropology, Environment and Sustainability, Sociology, Mathematics, Criminal Justice, Statistics, Computer Science, Social Work, and Economics. My education has taken me back and forth between a variety of disciplinary understandings, offering me opportunities to explore meanings of land entitlement, women's empowerment in Bangladesh minority

communities, and Bangladeshi immigrants' knowledge of justice in the United States. My interdisciplinary education made me well aware of my responsibilities as a researcher. In addition, my professional research work with Indigenous communities helped me to build relationships with various Indigenous communities.

In my university life, I have actively participated in various minority rights, Indigenous land rights, Indigenous women's rights, and Indigenous language movements. I had numerous opportunities to meet and discuss with CHT Indigenous leaders regarding their land rights, displacement, and violence. As a research professional, I have also had opportunities to attend and present papers at various national and international conferences in Canada, the United States, New Zealand, India, and Norway. Through my graduate studies and research assistant work, I have gained practical research skills undertaking literature reviews, interviews, participant observation, content analysis, and examining researcher's accountability in the research process.

In addition to my teaching and research experience, I have nearly five years of professional work experience with Indigenous communities prior to beginning my Ph.D. Working in Bangladesh as a research associate, I gained extensive professional experiences in the fields of community-based research, social inequality, developmental politics and globalization, and social justice advocacy. Having been involved with minority and Indigenous youth groups and people in the Chittagong Hill Tracts (CHT) through this work, I participated in various research studies on Indigenous land rights, women rights, and environmental rights movements, with numerous opportunities to meet and coordinate meetings with various government, non-government stakeholders, and CHT Indigenous leaders. I have also served more than three years on various university administrative committees such as: serving as Vice

President Academic of the University of Saskatchewan Graduate Student Association (2014-2015); sitting on the University's Sustainability Committee (2013-2015), the Search Committee for Vice-Provost Teaching and Learning (2012), and the University of Saskatchewan Graduate Student Transit Committee (2013). I have also been involved in community service beyond the university. I have actively participated in social and justice movements such as: the Idle No More Movement, First Nation's Land Rights, Saskatoon Community Radio (CFCR 90.5), Saskatchewan Climate Change, Food Bank, and Friendship Inn. I expect to continue with community service for the rest of my life because I am by necessity a vehement critic of injustice

In sum, my cross-cultural identity through my socialization, education, and professional experiences has made me well aware of my own position and responsibilities towards my participants' communities. I am living this life because I have learned that my identity is important in this world because it provides an alternative. As a non-Indigenous researcher, my empathy, learning, and professional experiences help me learn how to be respectful towards participants, particularly Indigenous participants with whom I have connected with over the last couple of years. My unique cross-cultural background is well suited for understanding a relational paradigm's ontology, epistemology, and methodology, which is informed by Indigenous paradigms (Smith, 2006; Tuck, 2012; Wilson, 2008).

Research Design

Selecting a research site story. The field site I chose for my research was a Laitu Khyeng Indigenous community in Chittagong Hill Tracts (CHT) Bangladesh. Getting access to this site was difficult, due to the fact that there was a travel advisory for the area issued by the

Canadian Foreign Affairs Ministry. Therefore, accessing field site for my research was an unexpected challenge.

Due to the travel advisory, I had initially hoped to use the alternate back-up sites outlined in my proposal. However, during my first two weeks in Bangladesh in attempting to visit these sites (one of which was my hometown), it became clear that they were not safe for me to stay and do research in. Current political unrest associated with an upcoming election and other factors, has made the whole country quite unstable. Unsure how to proceed, I made contact through a phone conversation with one of the Laitu Khyeng Indigenous leaders regarding my proposed research proposal and the possibility of using their home community as a field site for my research. Four of the Laitu Khyeng Indigenous leaders and one of the Elders from the Laitu Khyeng community came to my hometown after two days of travel, to request in person that I do my research with them. I was told by the Laitu Khyeng Elder and leaders that the CHT area where the community was located was relatively safe compared to my hometown and other centers of extremist movements within Bangladesh. Ironically, due to recent unrest across the country, the CHT was a safer place for me as a minority in Bangladesh as opposed to many of the urban centers for which there was no travel advisory issued. Through some research, I found I could stay in a community that had been unaffected by the violence near the CHT if I was unable to visit their villages due to the travel advisory from the Canadian Ministry of Foreign Affairs.

The Laitu Khyeng people I was in communication with wanted the research to be conducted as there had been no research conducted with the community in the past. Because the community did not have any opportunities to reach the national government's land-forest policy makers and to inform the policy makers of their needs, they wished to pursue expressing

their needs through the research project. These needs included their needs for protecting their mother land. Though I told them that my research could not change their situation, I was told by the Elder within the community I had contacted that they understood this, but that they wanted to proceed with the research anyway. They wanted to conduct the research with me and to collaborate on an analysis of it.

Since I had a pre-existing relationships and contact with Khyeng Indigenous Elders and leaders, and given that the CHT was safe for me especially in contrast to other areas of Bangladesh, I decided to attempt to continue with my planned research. For this process, I completed a travel exemption application to enter the CHT with the University of Saskatchewan, all the while having limited access to electric power and internet access. This was an extended process due to reviews by the committee, School of Environment and Sustainability (SENS), the International Student and Study Abroad Centre, the Risk Management Office, and the Provost's Office. While awaiting processing of the travel advisory, I was unable to visit Khyeng community, however another community outside of the CHT, the *Dolbonia Para*, was close enough to enable me to stay there while communicating with the research site. The area is also Khyeng Indigenous with similar living conditions to the community I was in communication with, but it is situated outside of Chittagong Hill Tract (CHT).

For starting the research process, four co-researcher participants were recruited from the Khyeng community located within the CHT by the Khyeng Indigenous Elders and leader. These co-researcher participants gathered data within the Khyeng villages originally planned as research sites over a period of four months, while meeting with me outside the CHT each night to go over data collection and analysis. Due to the travel restriction in place from the Canadian

Ministry of Foreign Affairs on the area housing the Khyeng community, my research became expenditure oriented to compensate the co-researcher participants and to cover my accommodation in the community adjacent to the CHT. Expenditures were used to pay for participants' transportation and food as they traveled to visit me in the adjacent community. Luckily, the University of Saskatchewan's Dr. Rui Feng Research Award and International Development Research Centre (IDRC) Doctoral Research Award were helpful in covering these expenditures. Coordinating travel time with participants was a challenge for a number of various reasons. For example, the Bangladesh Islamic extremist movement triggered countrywide transportation strikes limiting bus and train mobility which led to a transportation crisis during several points of my stay. The rainy weather was another impediment to dependable travel. However, participants and I solved these issues through sharing processes in our regular sharing circles and group meetings.

Though I was in a safe place that was both away from the violence and political unrest in much of Bangladesh, while still honouring the travel advisory issued by the Canadian Ministry of Foreign Affairs, I had to reconcile one additional issue with the University of Saskatchewan in order to conduct my research. The university took four months in processing my travel exemption application and did not give me permission to visit the actual Laitu Khyeng Indigenous community within the CHT I was studying until I returned to Saskatoon, Canada from Bangladesh. This was despite the fact that the political situation in Bangladesh had changed drastically since the travel advisory had been issued about the CHT region. During my time in Bangladesh, I was continuously informed that I was at greater risk in areas *outside* of the CHT, and that as a minority citizen within Bangladesh, the research site of the Khyeng community I was researching with was a *safer* place for me. In retrospect, this has

been an education for me in noting that the context of foreign travel advisories can change swiftly and may not always be appropriate for a researcher doing field work in a rapidly changing political situation. Despite the Bangladesh political situation and long delays in the university's processing of my travel exemption, I was able to successfully complete my four months of fieldwork and share my research results with the community according to my original proposal.

Participants selections. Participants in the study included co-researcher participants, Elders, knowledge-holders, leaders, and youths (according to Elders who range between 15 and 30 years of age are referred to as youth).

In order to select participants for this study I recruited four co-researcher participants from the Khyeng community located within the CHT by the Khyeng Indigenous Elders and leader. Since I had previous personal and working relationships with Laitu Khyeng Elders, knowledge-holders, and leaders I requested them to help me to recruit co-researcher participants. In my co-researcher recruiting letter I have clearly mentioned the purpose of the study (through discussing with community Elders, knowledge-holders, and leaders) and their (i.e., co-researcher participants) responsibilities (See Appendix B) to investigate the traditional and current forms of land management;

The four co-researcher participants' involvement with this research was a vital part. They have continuously engaged and participated all through field research and data analysis processes such as: helping to identify volunteer participants (such as Elders, knowledge holders, and youth participants) for this research; facilitating traditional sharing circles with as Elders, knowledge holders, and youth participants; conducting participants observation and photovoice; recording traditional sharing circles and individual storytelling discussions;

maintaining a commonplace book, which used to record your personal observations, art, poems, experiences, stories with the environment, field notes; helping to coding and analysing research data etc.

Elders, knowledge-holders, and leaders. Since I knew the Laitu Indigenous community it was not difficult to identify potential Elders, knowledge-holders, and leaders participants for this research; however, Elders and leaders have provided their guide to co-researcher participants and me. They provided potential participants information and how to contact them. I shared and discussed our research questions, objectives, and research methods for building participatory research processes (Datta *et al.*, 2014). Due to oral versus print-based literacy, they gave their consent verbally – in other words, I read the consent form to them and co-researcher participants signed it for them after they (Elders, knowledge-holders, and leaders.) gave oral consent. I gave a copy of the form to each participant for their records.

Youths. Elders and co-researcher participants helped me to find out youth participants. Youth age range was 15-28 from gender backgrounds. Co-research participants and I explained and discussed our research objective and benefits (See Appendix I). We also discussed their activities in this research, particularly photovoice. We told them that we wanted to learn their views on the places they identify with considering the cultural knowledge and practices of this area. As per the study's focus on participatory research methodology, we also needed youth to work with me specifically on the data collecting process. Hence, of the 8 youth, 5 (3 female and 2 male) volunteered to join us during Traditional sharing circles (conversations with Elders, knowledge-holders, and leaders) and other aspects of the research process. Youth's guardian gave their oral consent (co-researcher participants signed a consent form) on behalf of youths (those who were under 18).

The process of selecting participants and getting their consent took close to two weeks. This was necessary because I had to give the participants time, learn the cultural practices of the community, and build relationship and trust with participants.

Data collection story. A number of the data collection methods I employed were aligned with a participatory action research (PAR) methodology in engaging community participation, respecting local knowledge, and increasing participant benefits (as outlined in my research proposal). Research methods used within the research include: traditional sharing circles, individual storytelling, common place books, participant observation, and photo-voice. These methods were undertaken according to participants' cultures, traditional experiences, and spirituality. All data collection was carried out in Bengali, as my participants' everyday communicative language was Bengali and Khyeng, both in the *Gungru Mukh Para* and *Gunru Modrom Para* Khyeng communities. Khyeng language was not used, as I could not speak Khyeng. Sharing circles and individual storytelling processes were conducted on a collective and individual basis.

The interviews were audio-recorded and transcribed, then safely locked away within a secure location in the research sites. Two copies of data were kept. One copy was saved with a Khyeng Indigenous Elder and a second copy was saved with the supervising researcher. There were not any foreseeable risks in terms of privacy and confidentiality, as there was no public access to the raw data except by the Khyeng Indigenous research participant. Participants' (e.g., co-researcher participants and participants) identity well documented so that their voices can be heard, as all participants wanted this to be the case (as indicated in the consent forms).

Traditional sharing circles (TSC). Traditional sharing circle (TSC) is one of the most important research methods for conducting research with Indigenous communities (Lovell,

2007; Simpson, 2002). TSC refers here as focus group discussion (FGD) followed by local cultural norms and format (Lovell, 2007). TSC used in this research according to the Khyeng community's cultural practice. The main points to be explored includes: existing land management practices, traditional experiences (and their exceptions), and what we referred to as sustainability for future land-management. There were five Elders, three leaders, and three knowledge holders, and five youth's participants name proposed for TSC by community Elders.

The TSC method was both learning and sharing processes for me. Throughout these processes I have learned many Laitu Khyeng stories as well as having shared many of my own stories with the participants. There were three TSC carried out during my four months of fieldwork, all organized outside of CHT in the adjacent community I was staying in. The first two TSCs were conducted during the first month and the second month of my field research. Both of these were two hours long in duration and arranged during weekends so that participants did not have to contend with any of the road strikes. These two TSCs were followed by lunch, as participants had travelled a long way from their villages. However, the third and final TSC was four hours long and followed by overnight accommodation for the participants as well as dinner.

Individual story is sharing (ISS). ISS also played a significant role in our PAR research, because it helped to explore individual's spiritual and relational stories, memories, personal experiences, and expectations (Datta et al., 2014; Kovach, 2010). ISS were conducted in a similar fashion to traditional circle circles (i.e., drawing on sharing stories from the diverse set of participants, participants' accommodation being provided and time being compensated, and sharing processes following a similar narrative) but in a dialogue between two individual

as opposed to group sharing circles. There were nine ISS sessions conducted during my four months in the field, including a diverse set of participants such as Elders, knowledge-holders, leaders, and youths participants. Each meeting was 40 to 60 minutes in length. ISSs were recorded, and at later time transcribed by myself and the co-researchers.

Following each interview, a traditional gift presented to the participant. ISS conducted according to each participant's schedule. Questions and guidelines (Appendix K) used as connecting dots in an open-ended manner so that the flow of the conversations was not interrupted. Participants⁷ visited further if additional information needed.

Photovoice. Photovoice has the potential to enable participants to depict people and places that are important to them within their land, home, education, and wider community (Adams, Burns, Liebrecht, Ryschka, Thore, & Browne, 2012; Darbyshire, MacDougall, & Schiller, 2005; Datta et al., 2014). Photography also offers a direct way of seeing the world and provides a valuable, visual complement in a PAR methodology (Baker & Wang, 2006). Baker and Wang (2006) further state that photo-voice creates different ideas for both adults and youth than from those derived from verbal or written interviews. In this research, youth and co-researcher participants were requested to take pictures of their home--focusing on plants, animals, birds, land, the moon, rocks, and so on--and then shared their stories connected to their particular pictures. For this purpose, a digital camera was provided to participants. The printed pictures were given to participants for sharing their stories so that pictures could use in the data analysis. Photovoice also used in sharing circle and individual storytelling. The printed pictures were given to participants for sharing their stories followed by consent form so that pictures could be used in this research (Appendix O). As part of the data collection process,

⁷ Participants were visited only through four co-researcher participants.

participants were invited to share photovoice entries via Facebook to be analyzed together with additional data.

Commonplace books. Commonplace books are helpful for collecting personal experiences, feelings, ongoing interaction among the researcher and participants, and any other information related to traditional culture (e.g., poems, photographs, drawings, etc.) (Sumara, 1996). I learned how to maintain a commonplace book during my coursework in *EFDT 885: Investigations in culture and environment*, at the University of Saskatchewan. Unlike a journal, a commonplace book is meant to engage individuals in everyday activities with their place; these places can be cultivated land, forest, playgrounds, houses, waterfalls, local schools, and so on. A commonplace book represents a space where one can represent a variety of experiences in a variety of forms (Appendix M).

The use of common place books was an exciting and engaging method used in this research. It helped to build trusting relationships with the participants. Participants appreciated this process as they found it as their first time opportunity in their life to write their own stories about them in their own words. Most Elders and knowledge holders wanted to such an opportunity to share their stories, but I had to limit participation in the use of common books to participants who could both read and write. Due to a lack of Khyeng Indigenous script, we (the Elders, knowledge holders, co-researcher participants, and I) came to a decision that a common place book would be given to the four co-researcher participants as they were able to read and write in the Bangla language. Nevertheless, both Elders and knowledge holders agreed to share their knowledge with co-researcher participants for sharing in the co-researcher's common place books. Traditional gifts and honorarium followed each month for each co-researcher

participant commonplace book. The commonplace book was returned to the participants after data analysis.

Participant observation. Participant observation⁸ allows researchers to gather data on physical surroundings, human interactions, and engage settings (Cohen, Manion, & Morrison, 2000; Patton, 1990, 2002). A major advantage of direct participant observation is that it provides in-depth, here-and-now experience to reveal implicit practices. According to Lincoln and Guba (1985), “observation...allows the inquirer to see the world as his subjects see it, to live in their time frames, to capture the phenomenon in and on its own terms, and to grasp the culture in its own natural, ongoing environment” (p. 273). Others have explained participant observation as a tool that can be used to verify what has been shared through other tools such as traditional sharing circle, individual story sharing, commonplace book, and photovoice (Datta et al., 2014; Yin, 1994).

Co-researcher participants observed their fellow friends, Elders, and other community villagers in *Jhum* and plain land fields, homes, forest, local lakes, school, as well as in various government and nongovernmental projects (e.g., tobacco plantations, lumber plantation, brick-field, and tobacco burning place). Additionally, co-researcher participants and I observed conversations and TSC discussions to help understand and interpret the participants’ expressions and responses. Although I was facilitating the discussions, I paid attention to what was being said and not said. See Appendix O for our observation protocol.

Data Analysis Story

As previously discussed, the types of data collected within this research included transcribed recordings of interviews (i.e., traditional sharing circles and individual story

⁸ Participant observation was conducted only through co-researcher participants. Due to Canada Government travel advisory I was not able to participate in this observation process.

sharing), as well as information recorded via photovoice and commonplace books. The data analysis procedures were changed from the original proposal: instead of using Nvivo 10 as proposed, in the field I decided to undertake a manual data analysis process once I found that the co-researcher participants, Elders, and knowledge holders (those who were respected in Khyeng Indigenous community) were interested in being part of the data analysis process. It was hoped that sharing the data analysis process might have a meaningful benefit to the participants, as well as provide an analysis that was truer to the meanings and intentions of the research participants.

Data analysis process. An inductive coding process was applied in the analysis. An inductive approach was used “to discover the meaning that people award to their social worlds and to understand the meanings of their social behaviour” (Boeije, 2010, p. 12). In other words, rather than using a set of pre-determined codes, the codes were inductively drawn from the data based on the content therein. A “code” determined through this inductive process can best be understood as “an implicit topic that organizes a group of repeating ideas” (Saldana, 2010, p. 139). For the coding process, we used keywords to identify thematic codes, which we then grouped into both sub-patterns and patterns (i.e., larger overarching topics).

The first stage of data analysis involved myself and four co-researcher participants reading through and viewing all of the data (transcribed story circles and individual stories, photos, and commonplace books). We divided our transcribed story circles and individual story data sets among the five of us (four co-researchers and myself) for the coding process, so that we all had an opportunity to examine each transcribed data set. We each noted keywords that represented the ideas in the data. Upon reaching more than 250 keywords collectively, we shared and compared our keywords and created a shared codebook that included a range of

themes found in the data. We then re-visited all of the data using these shared keywords to code themes (see Table 1) according to keywords commonality, “and ordered in subordinate and subordinate outline format to reflect on their possible groupings and relationships” (Saldana, 2010, p. 142). Photovoice keywords and themes were also identified through a similar sharing process. After identifying themes from story circles, individual stories, and photos, the co-researchers identified keywords and themes in the commonplace book data.

The next stage of data analysis involved the co-researchers and myself sharing codes with the Elders and knowledge holders. The Elders and knowledge holders were asked to add and/or change any information that they thought was significant for this research. When new themes were suggested that were not represented in the original list of inductive codes, these were added to the codebook.

After confirming themes with Elders and knowledge holders, we used a pattern coding method to build keywords and themes into sub-patterns and larger patterns. In pattern coding we reviewed our first cycle themed codebook to assess themes’ commonalities and determine sub-patterns, which we then grouped into larger umbrella patterns. In identifying a pattern code we focused on understanding the *whys*, *whats*, and *hows* of how themes were interrelated and interdependent. We identified 34 sub-patterns in eight larger patterns (see Table 4). The participants, particularly community Elders and knowledge holders, were in agreement with identified sub-patterns and patterns.

A participatory methodology for data analysis. In working in a participatory data analysis process with co-researcher participants, Elders, and knowledge holders, it became evident that this ‘sharing data analysis’ was an active process for both the participants and myself as a researcher because participants appeared to take ownership of their research

findings. This data analysis process made a space for participants to dream of and hope for a future where their mother-land and water had been preserved. Participants wanted to be sure their needs and dreams were included in the draft findings, so that this research would have an impact at the policy level and speak on their behalf. By involving co-researchers, Elders, and knowledge holders in the data analysis, this also helped to ensure the trustworthiness of the themes by ensuring that the identified themes matched the understandings and interpretations of community members (Denzin & Lincoln, 2008).

Research Ethics

This research was approved by the University of Saskatchewan Behavioural Research Ethics Board. Ethical guidelines as set out by the Social Sciences and Humanities Research Council of Canada (2010) were strictly adhered to. I clearly explained and discussed the purpose of the research to the participants. I explained the expectations in terms of work and time commitments, while letting the participants decide the appropriate times to meet.

As previously discussed, given the violent political situation in Bangladesh and the vulnerability of the Laitu Khyeng Indigenous community in the context of this social and political unrest, the anonymity as well as confidentiality of the research participants was of paramount importance. Therefore, every possible measure was taken to protect participants' identities. For example, participants' names were concealed with pseudonyms, while the names of the places they were situated within used as pseudonyms if they chose. Documented data such as interviews, transcripts, and field notes did not carry name identifications. In the commonplace books, co-researcher participants' names were well documented according to their requested. The interviews were audio-taped, transcribed, and translated, then safely locked away from the research sites, and one copy data set was given to the community's

leader. There were not any foreseeable risks in terms of privacy and confidentiality, as there was not public access to the raw data except by the Laitu Khyeng Indigenous participants. Individual participants were free in any situation and at any time to remove themselves from the research and/or remove their consent. Participants willingly participated and conducted the research. The consent process was a continuous process according to the participants' culture. Local participants individually and collectively discussed and were informed of any potential threat and dangers from the sharing of knowledge.

Direct quotations from the discussions and conversations were used in the research publications and presentations with participants' consent. To assure confidentiality of participants in the research, some names were replaced by pseudonyms. Participants were given the opportunity to choose their own pseudonym should they wish. Original copies of all data will be kept for a minimum of five years and will then be destroyed.

This research recognized the value of Indigenous perspectives and their contribution to the research. The knowledge and experiences of Indigenous Elders and knowledge holders were taken with full respect. Participants discussed that this research would not direct benefits to the participants; however, participants would share ownership of the research results and publications. Co-researcher participants have been co-authors of post research publications (Datta et al., 2014), while the community can get access to the research results, including prints, audio, video, and digital materials at any time. All research reports and publications will be available to the communities and individuals through their community leaders.

Safety was an important issue in conducting research with Bangladeshi CHT Indigenous communities, due to the attitudes of Bangladeshi mainstream settlers and the Bangladeshi government's militarization (Human Right Report, 2013). However, building

trustful relationships with Elders and knowledge-holders was created safe spaces for research in Indigenous communities (Datta et al., 2014).

Outline of Reminder of the Document

This chapter has described the research approaches that I used to explore how land, management, and sustainability were taken up in the forms of knowledge and practice embedded in the local culture of Laitu Khyeng Indigenous community. A participatory action research methodology was employed in the study. Co-researcher participants were a vital part of this research. Elders, knowledge-holders, leaders, and youths were the research participants. Data were collected through the traditional sharing circle, individual story sharing, photovoice, commonplace books, and observations. Following an inductive data analysis, four themes were identified which I present in the next chapter.

CHAPTER FOUR: RESULTS

This chapter presents the results of the study conducted at Laitu Khyeng Indigenous community, Chittagong Hill Tracts (CHT), Bangladesh (see Figure 1). Based on the review of literature and the important issues identified therein – including identified methodological approaches – the following three research questions were developed through a sharing process with Elders, knowledge-holders, leaders, youth, and co-researcher participants to achieve the purpose of the study:

1. What were traditional Laitu Khyeng Indigenous community land-management customs and practices, particularly in relation to environmental sustainability?
2. To what extent are Laitu Khyeng Indigenous community members affected by introduced land-management projects, such as those promoted by government, NGOs, commercial companies, and multinational agencies?
3. What are Laitu Khyeng Indigenous community hopes and expectations regarding land-management policies and practices, particularly in relation to environmental sustainability?

Following the inductive analysis of data described in the previous chapter, we⁹ identified a range of themes, which we then categorized into three domains aligning with our three research questions (See table 1). Based on the data analysis, as researchers we identified the following three themes: Theme 1: meanings of land, water, and management; Theme II: the community's perceptions of the Bangladesh government's land and water management projects; and Theme III: hopes, dreams, and responsibilities for sustainability. The identified sub-themes in each theme correspond to the research questions in the following ways: the first

⁹ Four co-researcher participants and myself.

theme with question one; the second theme with question two; and the third theme with question three.

Table 1. Themes and Sub-themes.

Research Question	Theme	Sub-themes
What were traditional Indigenous Community land-management customs and practices, particularly in relation to environmental sustainability?	Meanings of land and water, and traditional management	<ul style="list-style-type: none"> – Meanings of land and water – Meanings of traditional management
To what extent are community members affected by introduced land-management projects, such as those promoted by government, NGOs, commercial companies, and multinational agencies?	The community's perceptions of the Bangladesh government's land and water management projects	<ul style="list-style-type: none"> – Community's Perceptions on Current land, water, and forest management – Current land, water, and forest management – Negative impacts on women and native species
What are community hopes and expectations regarding land-management projects and practices in the future, particularly in relation to environmental sustainability?	Community's views in relation to environmental sustainability	<ul style="list-style-type: none"> – Community's views of sustainability and sustainability management – Youth's sense of sustainability – Community's goals for sustainability

In presenting the findings of the study, we use quotations from conversations with Elders, knowledge-holders, leaders, youth, and co-researcher participants' conversations. To maintain the authenticity and integrity of the data, we present the quotations verbatim as spoken by participants (English translation by co-researcher participants with participants' consent). In what follows, we present the study's findings under the three themes.

Theme One: Meanings of Land, Water, and Traditional Management

The broad focus of the first research question is on traditional land management customs and practices. Data analysis suggested two emergent sub-themes within theme one that

address this question (a) the community's perceptions of land and water meanings; and (b) the community's understanding of traditional environmental management (through agriculture domain¹⁰, traditional modes of administrative structure¹¹, spirituality, and the economy). Evident in data collected across the various research methods employed in the study – sharing circles, individual story sharing, co-researcher commonplace books, and participant observation – participants suggested that land, water, and traditional management are integrated and interconnected within everyday practices. Our research findings corresponding to each sub-theme emerging in theme one are discussed in the following sections.

Sub-theme one: Meanings of land and water. Drawing from theme one, one of the central sub-themes evident in the data relating to the current and past traditional land and water practices is that of meanings associated with land and water. In explaining the community's orientations to land and water, the research participants, particularly Elders and knowledge-holders, highlighted interconnectedness, spirituality, belongingness, identity, respect, honor, sacredness, and ritual. These issues are discussed below.

A significant issue that arose in participants' discussions of land and water was the *interconnectedness* of the two. During our first sharing circle and individual story sharing process, both Elders and knowledge-holders suggested that the meanings of land and water are linked. For example, Elder Kosomo Pure Khyeng explained meanings of land and water:

Land and water are everything for us such as: our cultivated land, uncultivated land, food production, water, birds, animals, hills, sky, winds, insects, plants, trees, feelings, spirituality, sounds, father-mother, brother and sister, and others. Land

¹⁰ According to the community's Elders and knowledge-holders, the agriculture domain entails the community's food production and consumption, such as crops, cultivation tools, and natural resources.

¹¹ *Traditional administrative structure* was explained by Elders, knowledge-holders, and leaders as Indigenous (local) authority over Indigenous natural resource management, consumption, and life in CHT.

and water are for us both visible and invisible things such as: visible things are human, animals, birds, crops, lands, insects, mountains, rocks, the moon, sun, water, and so on; and invisible things are our feelings, winds, smells, sounds, spirituality.

Participants, particularly Elders and knowledge-holders, emphasized respect and honor, spiritual practices, and responsibilities as facets of this interconnectedness. Elders and knowledge-holders explained that they enjoy interconnected collective practices with land and water as they (community) engage physically, emotionally, economically, socially, culturally, and spiritually. Another important issue discussed by Elders and knowledge-holders was that land and water knowledge are not static but change over time as the community's cultivation culture changes.

A related focus in the data was on the significance of *spirituality*. In Khyeng, spirits are considered as different forms of practices that offer protection through the community's everyday relationships. Knowledge-holder Kasamong Prue Khyeng¹² explained that protection was viewed as being offered through four spirits (see Figure 2): the sun spirit, the land and water spirit, the nature spirit, and the exchange spirit. The sun spirit represents a number of gods: the water god, the wind god, the hill god, the sky god, and the moon god. Similarly, the nature spirit is a combination of the cultivation god, the animal god, the cultivation tools god, the crop god, and the bird god. The land spirit corresponds with the plant god, the animal god, the water god, the land god, and the insect god. Finally, the exchange spirit links with the crisis relief god, the equal distributions god, the sharing god, the food god, and the market god. Elder Basa Khyang provided further detailed articulations about relationships between meanings of land-water and spirituality, emphasizing his perception of land and water as “everyday spiritual

¹² In some parts of this chapter we have enclosed participants' information, and some parts we have not disclosed participants' information in accordance with their request.

practices;” and that, “The meanings of land and water are our things’ spiritual prayers: They are our protectors.” A significant point we learned from our sharing circles and individual interview processes was that each spirit was considered a vital actor toward illuminating the community’s cultivation culture and customs; all of these spirits were divinely interconnected and they determined the community’s everyday relational and spiritual practices in their forested and deforested¹³ lands.

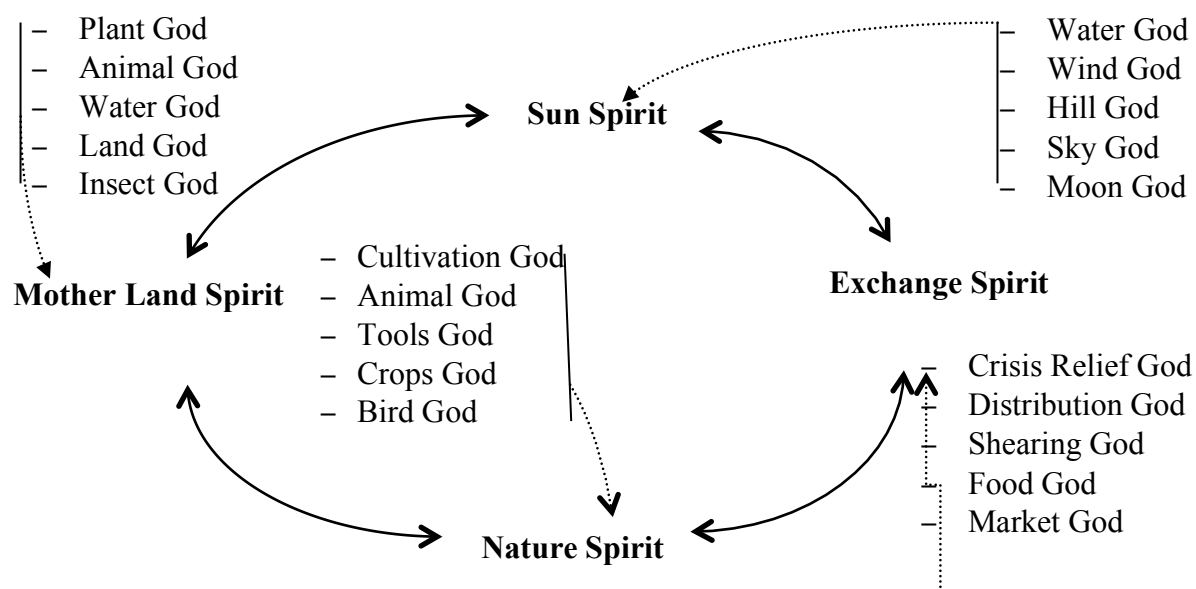


Figure 2. Land, Water, and Spirituality Spirits. This figure developed based on participants’ relational and spiritual stories.

According to participants, land and water are also understood in terms of *belongingness* in Khyneg culture. For instance, Elder Okko Khyeng explicitly stated in the first sharing circle: “land and water is not belong to us, we belong to them. However, we can share our land and water collectively. For us, both of them are our Parents.” He further stressed the collective sharing process as follows: “Our beautiful land and water are our parents and our heart. We believe our land and water have created us. We cannot survive without each other.” According

¹³ Deforested land is known as plain land in the community (Adnan, 2004).

to this understanding, land and water are a part of collective rights, based on a relationship with nature. Therefore, land and water are credited with establishing belonging relationships among Khyeng members, animals, plants, and fish.

Many of the sharing circle participants spoke about their ties with local land and water, and explained how their ties represent their Indigenous *identity*. Participants discussed that land and water were central to the community's belief, identity, and cultural values. For example, Elder Okko Khyeng expressed the following: "our land and water talk for us. Our land, water, forest, animal are all about who we are."

The community's everyday land and water practices were also articulated in relation to *respect* (i.e., recognizing every animal and plant species has a significant purpose in the environment). For example, Elders and knowledge-holders suggested that respect was an important point for explaining their land and water to the community. Elders and knowledge-holders explained that crop production and animal husbandry were interdependent in the mixed farming systems of the community. Animals are hugely important to the economy, considering their roles in transportation, land cultivation, and providing manure for fuel and fertilizer. As a symbol of respect, the most families raise cattle as an essential component of their management system. Since dairy cows are directly linked to family income, nutrition, and welfare, the community views cows as intimately connected with the cultivation god(s). While animals are a part of the mixed farming system, the goal of their integration is not the maximization of material gains. Rather, participants expressed that the goal is to practice respect for the value of all living and nonliving components of the environment.

To explain the meanings of land and water, both Elders and youth drew on descriptions of *honor practices*. Co-researcher Nyojy U Khyang provided an example in his commonplace

book: “When we climb up to a big tree for foods, we pray and ask permission from the plant in saying: ‘Do you allow me to take your creation [fruits] for us?’” He proceeded to explain that, “The community believes if they ask permission to trees, indicating the community may not overuse their resources, and then the trees may continue blessing the community.” Nyojy U Kjuang shared this sentiment in the prayer, “We will not hurt you and will not take more than we need.” Similarly, Elder Okko Khyeng stated during sharing circle that:

The land and water are our teachers who teach us how to honor our land and water gods. We have many lands and water gods, such as: *Lokhei*, *Bogle*, *Siksi*, *Khamotto*, *Shoila Siksi*, and *Mina* [names of land and water gods], whom we pray to and respect every day. In our gods¹⁴, names we sacrifice our domestic animals. We believe our relational land and water gods will protect us from various crises and provide us foods.

Land and water were also indicated as significant sources of *ritual*. Ritual was discussed in relation to seeing the land and water as alive, and as associated with honoring ancestors. For example, we learned that many people in the community started their day by praying to the forest land and water gods and Elders. They believed if they did not respect and honor the land and water, the ancestors would not protect them during food crises and sickness. Elder Kosomo Prue Khyeng shared the following prayer during an individual interview to explain his perception of land and water rituals (translated by co-researcher participant Mathui Ching Khyang):

O our beautiful Mother forest land and water,
You are the great divine power
We are devoted to you
You are in our heart, please do not leave us.
Protect us and keep us on your blessings.
Give us strengths so that we can protect us.

¹⁴ The term *god* is used for explaining the community’s spiritual belief in nature gods (e.g., the land gods, hill gods, water gods, stone gods, sun gods, animal gods).

The community explained land and water were *sacred places* for them. The community saw them as part of creation. Participants suggested they think they were created by land and water. The community used the word “sacred” as a sign of care. In other words, sacred was a word used to convey the special care taken with the land and water. Sacred was also discussed as a connector between spirituality and practice. For example, Elder Kosomo Prue Khyeng said that “since our land [father] and water [mother] are as our parents, we have sacred responsibilities to care [for] our parents [land and water].” He also believed that “what we do to the land and water today impacts on what happens to the environment in the future.” Thus, the term sacred has significant meaning in the community’s everyday management practice.

In order to understand traditional meanings of land and water, it is evident that Elders and knowledge-holders positioned their understanding in relation to everyday knowledge and practices. The data suggest that the community’s attitude towards land and water consists of an obligation to care, honour, and learn about land and water, and a sense that they are connected spiritually to land and water in their everyday practices. In other words, understandings of land and water are interconnected with everyday life (further elaborated under sub-theme two).

Sub-theme two: Meanings of management. The second sub-theme that arose from the data analysis addressed issues of traditional meanings of management in relation to local knowledge and practice. This section examines the extent to which law (in particular customary laws¹⁵), traditional institutions, and the rights of participation by Indigenous people

¹⁵ According to the Elder Basa Khyeng, the customary laws are their community and other Indigenous communities’ ancestral ways of life/rules, which they have been practicing for generations.

are taken into account in natural resource management in the region. Our focus was not on understanding the Bangladesh government's meanings of management; rather, it was on understanding Indigenous meanings of 'management' embodied in Indigenous people's everyday lives.

In our research, we extensively discussed differences between Western and Indigenous knowledge practices (as reviewed in chapter 2) with Elders, knowledge-holders, leaders, and co-researcher participants, and agreed to use the term "management" according to the community's ways of understanding, practicing, and respecting their land, water, and environment. Participants wanted to use the western term management, as it is widely used in Bangladeshi State land and forest policies nationally and internationally. For example, Elder Basa Khyeng expressed in a telephone conversation: "we need to talk and use words as Bangladeshi government uses so that our government and international agencies will be able to understand the importance of our traditional cultivation practices." Thus, the research collective used the western concept of management according to Elders', knowledge-holders', and leaders' perceptions.

Participants suggested that the community's understandings of land, water, and forest management are interconnected with a number of issues such as: the agriculture domain, traditional administration, spirituality, and traditional economy. To explain the community's views on the theme of environmental management, each are elaborated below.

The agriculture domain. The agriculture domain was explained as a vital part of the community's environmental management practices. The community's traditional agricultural domain was conceptualized by participants as a web of inter-related and multi-directional relationships (see Figure 3), as specified during the first and second sharing circle discussions.

Several significant interconnected aspects of the agriculture domain were discussed by study participants, including types of crops, forest resources, cultivation tools, and domestic animals.

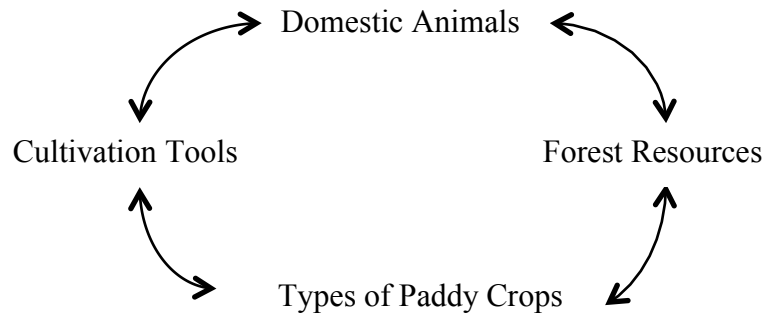


Figure 3. The Agriculture Domain. This figure was developed based on conversations with Elders and knowledge-holders.

Types of paddy. Particular crops were discussed to have a major role in land and water management practices in the community. Elders and knowledge-holders explained that a particular crop could be understood as a family member, and could have an impact on other family members' actions (such as, decision-making processes, cultivation, savings, and spiritual celebrations). There are three kinds of paddy crops produced in the Khyeng community as explained by Elders: *Binni* crop (mostly used in spiritual practices and special occasions), *Jhum* crop¹⁶ (for everyday use), and *plain land* crop (common paddy crop, which is similar to *Jhum* crop). To explain land, water, and forest management, participants discussed the meanings to the community of these three different types of paddy crop, and how the different crops influence everyday management practices.

The *Binni* paddy crop plays a crucial role in the community's harvest management. The *Binni* paddy crop was described by participants as a symbol of land fertility and as a symbol of respect. First, participants suggested that the community believes that this symbol of land

¹⁶ Different kinds of paddy crops, vegetables, fruit, and other cash crops.

fertility increases land fertility generally across all forms of crop production. For example, the Khyeng community does not cultivate Jhum or plain-land crops without cultivating a Binni paddy crop. Knowledge-holder Ching Sho Khyeng indicated that Binni crop cultivation is seen as a way to maintain the health of different crops simultaneously. Second, growing Binnip crop as a symbol of respect was explained in terms of the community's moral values¹⁷. Elder Kosomo Pure Khyeng discussed how the cultivation of Binni crop' contributes to the protection of land, water, and animals.

Similar to the Binni paddy crop, the *Jhum* crop also helps illuminate the community's land, water, and forest management practices. In his commonplace book, Hla Aung Prue Kyeng summarizes Elders' and knowledge-holders' description of Jhum functions. First, Jhum is central to a multiple-crop cultivation system, including different kinds of paddy crops, various types of vegetables, and many types of fruits and cash crops. The potential of the Jhum land to sustain multi-crop food production ensures staple food and nutrients for the community. Second, the Jhum cultivation practices can help create new forests of traditional plants for other forest actors such as mammals, birds, and insects. Third, the Jhum land crops act to protect large plants, particularly large trees growing on hilly slopes. Fourth, the Khyeng have certain rituals to control the fire within Jhum land; such Jhum cultivation rituals not only control forest fires and protect forest animals, but also provide ashes and fertilizers for future forest cultivation. Fifth, the Jhum crops are knowledge keepers; during Jhum cultivation, the Khyeng practice their traditional dancing, singing, story-telling, and poem reciting. The Jhum crops are

¹⁷ According to knowledge-holder Kasamo Prue Khyeng the community's 'moral value' is based in collective honor towards natural laws (as explained above).

considered a place of knowledge keeping¹⁸ for the community. Finally, the Jhum crops help to encourage the practice of customary laws; the community practiced Jhum cultivation according to the Khyeng's customary laws, such as traditional cultural practices, values, and cultivation.

*Plain-land crops*¹⁹ are mainly grown in the plain land. According to knowledge-holder Kosomo Prue Khyeng, almost 30% of the community's foods come from plain land crops. Most of these are linked with local lake water, domestic animals, and fish. Elders explained in the second sharing circle that plain-land crops were not only considered a source of food production for Khyeng, but also as sharing places for non-human beings, such as domestic animals (e.g., cattle, pigs, sheep), birds, and fish. In addition, plain-land crops were discussed as providing financial solvency²⁰ to the community.

In sum, participants emphasized that the various kind of crops inform and require different forms of management, including being a source of the Khyeng community's inspiration for cultivation; a symbol of forest diversity and protection; and a symbol of cultural and financial security.

Forest resources. Forest resources are an important component of the community's land, water, and environment management systems. Elders and knowledge-holders consider forest resources to include forested land and hilly land. To them, these forest resources provide many “*gifts*” (i.e., Elders explained these as opportunities) for the community's everyday management practices. These gifts include the space to grow edible vegetables and paddy crops, animals for hunting, bamboo for housing, and plants for medicine and spirituality.

¹⁸ Elder Basa Khyeng expressed, “Our Jhum land is our source of knowledge. Everyday we and our children learn many things [relationships, cultivation processes, and responsibilities] from our Jhum land.”

¹⁹ These include rice, wheat, vegetables, and spices.

²⁰ The community can sell their plain land crops in the local market for cash currency, as participants explained.

Traditional forms of management practices create equal accessibility to community members. For instance, community members have equal rights to the hilly land, *Jhum*, and water sources. This access helps the community to practice their ancestors' spirituality. Elders explained that these forms of access were helpful in creating two types services in the community: exchange labour and appreciated labour. The exchange labour is characterized as a service. The term service was used by participants to explain different forms of labour, such as plain land labour, *Jhum* land labour, and house labour. This service is used to produce subsistence crops (e.g., ginger, vegetables, fruits, cotton, and animal foods) and paddy crops. The labour service is exchangeable for other varied labour and/or cash arrangements. The second form of service, appreciate labour, is form of gift. Various forms of labour are practiced, gifted, and consumed as a form of appreciation. Appreciation can be both respect and partial payment through nonmonetary products such as rice or beer. This rice-beer offering can create long-term relationships among villagers through the form of entertainment or through expressions of respect.

In summary, participants indicated that forest resources were a major source of the community's food supply, agricultural cultivation, and economic well-being. As a result, forest cultivation plays a significant role in maintaining management practices in the community.

Cultivation tools. The land, water, and forest management practices are largely depended on the community's traditional cultivation tools: the sword, the spear, and the knife. These three kinds of cultivation tools have different functions in the community's management practices.

The *sword* has two purposes in the community's environment management, including ritual and inspiration functions. The ritual purposes, explained as *gifts* (i.e., forms of honor),

are practiced during spiritual ceremonies such as those corresponding with marriage and harvest. For example, during marriage ceremonies the sword is used as a symbol of honor toward both the land and to the new couple; and, during harvest ceremonies, the sword is used as a form of inspiration. The inspiration is associated with the potential protection of family, forest, plants, land, water, and animals. However, in both purposes Khyeng community members do not sell their sword for monetary gain. The sale of a sword is described as dishonoring the family and community traditional values.

The *spear* is also used for various ceremonial purposes, such as rituals of honor, prestige, and respect. The social value of the spear to the community is greater than its cash value. The community considers the spear is as their protector. For example, one of the Elders stated: “we use our spear in our food cultivation and house work. We cannot think a day without spear”. Like the sword, the Khyeng do not sell their spears. The rational for not selling the spear is based on loss of food production that would be inevitable. However, the Khyeng community exchanges spears with other Indigenous communities as nonmonetary form of trade. It is a symbol of honor and respect to their ancestors, land, and community.

Together with the sword and spear, the *knife* is considered a vital tool for environmental management. The knife is used as a gift in marriage ceremonies, as a symbol of hard work in *Jhum* land, and as a symbol of fertility for new families. According to custom, knives have to be kept in a high place as a symbol of power to protect the harvest and family from future crises. Although displayed as a prominent symbol, the knife is commonly used and not considered a commodity of monetary value to the community.

In sum, the data has shown that the three cultivation tools have different kinds of influences on the community’s management practices. First, the Elders and knowledge-holders

discussed that the sword and the spear symbolize the power of judgment for land distribution within the community. For example, sword and spear holders are considered respected and knowledgeable individuals. Second, the number of swords and spears are symbolic of the economic strength of the community. An abundance of sword and spear holders is related to a food surplus and therefore protection power. Third, the knives represent a symbol of fertility and hard work.

All three cultivation tools (the sword, the spear, and the knife) are explained as symbols of empowerment for all genders, and all Khyeng have equal access during their everyday cultivation and ceremonial practices. The Khyeng men/women/others all have equal access to these tools, and all gender identities are welcome to participate in cultivation. On the contrary, other non-Indigenous Bangladeshi people have different kinds of practice (Adnan, 2004). For example, one of our co-researcher participants has shown in their commonplace book that the Khyeng women produce their foods with their cultivation tools (i.e., sword, the spear, and the knife) and sell/exchange their produce in their village market. The Khyeng women can hold these tools and have major decision-making roles in family and community.

Domestic animals. Domestic animals represent a significant component of the community's land, water, and forest management. The correlation between domestic animals and traditional management practices is described in the data as bestowing different degrees of social and economic prestige within the community. Having more domestic animals means more economic security, a more highly esteemed reputation, and more prestige for the entire family. However, because domestic animals are considered protector god(s) for the Khyeng, the conversion of domestic animals into monetary currency does not have equal meaning in terms of prestige and social reputation. During the research gathering process, Elders clarified

that different domestic animals have varied influences on the community's sense of management practices. Although the Khyeng traditionally did not often sell their domestic animals for monetary gain, their tradition has changed recently. Presently, cattle, chickens, and goats have cash value in the local market and can be transformed into economic capital to obtain education, daily goods, and labour for cultivation practices and other resource management. Elders also pointed out that although the Khyeng practices concerning domestic animals have changed recently, the community are still spiritually connected with their domestic animals in their everyday life, including cattle, chickens, goats, and pigs.

Cattle have multiple benefits within the community's everyday management practices, and are able to protect them during times of crisis. For instance, cattle have many uses in the community's land and water practices, such as digging and ploughing plain land for cultivation, producing dung for fertilizers and fuel, providing milk for food items, and functioning in spiritual ceremonies.

The *pig* is another common domestic animal in the community. Domesticated pigs were described in the data as a gift that is exchangeable among the Khyeng or other Indigenous communities; however, the pig market is restricted within the inter-community market due to the pork restriction observed by the Bangladeshi Muslim community. The pig is used in various cultivation ceremonies such as *Jhum* celebrations, spiritual celebrations, and ceremonies around crop production. Although domesticated pigs are symbolized as gifts in the community, recently pig husbandry has been used a form of monetary exchange within Indigenous communities. Thus, like cattle, pigs can also be transferred into both cash value as well as into a symbol of sacrifice. For instance, one of the Elders said that, “the pig does not have cash value in the Bengali market [outside community market] due to mainstream Muslim

religious sanctions”, thus the pig is mostly used in land and water management spiritual ceremonies.

In summary, the researchers learned that the domestic animal domains have spiritual, relational, and economic values within the community, and were able to be transformed into symbols of power, inspiration, and support for the community’s everyday management practices.

Research participants – particularly Elders, knowledge-holders, and leaders – agreed that the community’s land, water, and forest management were interconnected within traditional cultivation culture (i.e., the types of paddy crops, forest resources, cultivation tools, and domestic animals). Participants described management in terms of the relational and spiritual ceremonial function of the domains outlined above. Exemplifying the point, Elder Kosomo Prure Kheyng depicts relationships between agriculture domains and management practices as interconnected “everyday ceremonies.”

Traditional administrative structure. While the researchers learned of the community’s environmental management through data on agriculture domains, descriptions of traditional administrative structures were also discussed as vital for the community’s land, water, and forest practices. Elders and leaders highlighted the Laitu Khyeng geographic location as an important factor for exploring relationships between the community’s modes of administrative structure and understanding of management practices. For example, the Chittagong Hill Tracts (CHT) are covered by three Circles²¹ which included: the *Bhonong* Circle, the *Chakma* Circle, and the *Mong* Circle. The community’s villages are mostly situated within the *Bhomong* Circle

²¹ A circle is utilized to represent Chittagong Hill Tracts’ (CHT) Indigenous communities’ geographical designation. A Circle is equivalent to a district (Adnan, 2004). The term is used here for explaining the Laitu Khyeng Indigenous’ traditional administrative structure in relation to their natural resource management practices.

(Adnan, 2004). The traditional administrative structure involves three components: the village, the Mouza (i.e., several villages), and the Circle (i.e., several Mouzas). Within each component, administrative positions are designated (Roy, 2002). The first administrative position is the village manager, known as the *Karbary*; the second administrative position is known as the *Headman*; and the third administrative position is known as the *Raja/King* of the Circle. Each administrative structure has different roles in management, but the three administrative positions are all interconnected. The Indigenous villages have three *Karbary* positions, and they work with other Indigenous communities' *Headmen* and *Circle Chiefs* in Mouzas and Circles. The traditional administrative structures control land, water, and forest resource management and distribution in the community. Data on the above three administrative positions are discussed below, illuminating selection criteria (see Table 2) and responsibilities related to traditional land and water management.

Karbary. At the village level, the *Karbary* administrative position is the most important position related to the Indigenous traditional land, water, and forest resource management structure. The *Karbary* is also known as the village manager, and responsibilities include overseeing village forest and plain land resources and responding to local problems. The village manager can be both selected or elected democratically by villagers, and is the spokesperson of the village in dealings with *Headmen* and other government administrators.

Table 2. Traditional Administrative Structure and Land and Water Management. The traditional administrative structure table is collated from personal and collective stories shared by Elders and community leaders.

<u>Administrative Position Name</u>	<u>Selection Criteria</u>	<u>Responsibilities</u>
<i>Karbary</i> (Village Manager)	<ul style="list-style-type: none"> – Selected/elected by the village community/ies – Indigenous identity – Special knowledge of village community/ies' customary laws – Special knowledge of village community/ies – Knowledge of spirituality – From own village – Good relationships with village community/ies' members – Decision-making ability 	<ul style="list-style-type: none"> – To be a spokesperson for the village community – To distribute <i>Jhum</i> and plain land among village members – To manage village forest (land and water) – To distribute village forest resources among village members – To perform as spiritual leader – To make decisions for the village community
<i>Headman</i> for each Mouza	<ul style="list-style-type: none"> – Selected/elected mostly through inheritance – Indigenous identity – Respected person – Special knowledge of communities' customary laws 	<ul style="list-style-type: none"> – To distribute forest resources (land and water) among village members – To deal with village <i>Karbary's</i> unsolved problems. – To collect taxes from villages – To work with Circle <i>Chief</i> – To work with state forest and Indigenous administrations
<i>Raja/ Circle Chief</i> - Selected from each Circle (comprised of Mouzas)	<ul style="list-style-type: none"> – Selected mostly through inheritance – Indigenous identity – Respected person – Special knowledge on Indigenous communities' customary laws 	<ul style="list-style-type: none"> – To distribute forest resources (land and water) within <i>Mouzas</i> – To deal with village <i>Headmen's</i> unsolved problems. – To collect taxes from <i>Mouzas</i> – To work with government forest and Indigenous ministries – To working with other two <i>Circle Chiefs</i>

The village community arranges a sacrifice ceremony to honour a newly selected/elected person. Knowledge-holder Ching Sho Khyeng emphasized that this position cannot be profitable and/or cannot be used for self-interest.

The selection criteria for the *Karbary* position reflects the village community's interests. Following the recommendation of village members, the position is appointed by the Mouza *Headman* for the Mouza area, the Circle *Chief* for the three Circles in CHT area, and the government's Deputy Commissioner (DC). According to village customary law, the *Karbary* position gets selected/elected in the particular interest of village communities. For example, the proposed person: must be from the Indigenous community; is required to have special knowledge of the village's customary laws; must have supportive relationships with village communities; must be able to understand and lead spiritual and religious traditions for the village; and must have the ability to make decisions for the village communities to solve local problems. Since CHT Indigenous administrative structure is maintained by diverse Indigenous communities, being multilingual is another significant quality for selecting a *Karbary*. During the data collection period, there were three *Karbaries* in Laitu Khyeng Indigenous community (i.e., within our research site). Each *Karbary* was able to speak multiple languages including the community language, the *Marma* language (another Indigenous language), and Bengali (Bangladeshi official language). The qualified candidate's name is proposed to the Mouza *Headman* by community Elders, leaders, knowledge-holders, and youth leaders. The Mouza *Headman* submits the village members' elected representative to the Circle *Chief*, and the *Chief* relays that representative to the DC for official documentation.

The *Karbaries'* responsibilities for the village communities include Indigenous land and water management in the community. The village manager is responsible for the control of

forest resources and distribution; however, most major decisions take place through a democratic process with village members' consent. During critical times, the *Karbary* promptly calls a meeting that is convenient for all village members to participate. Decisions made by the *Karbary* are decided also in consultation with the *Mouza Headman*. If there is an important issue or problem regarding the cultivation and/or management in the village, the *Karbary* is the first person to try to solve the problem. The *Karbary* responsibilities can be organized into two broad categories: the first is a land distributor and tax collector, and the second is a spiritual and healing leader. As a land distributor and tax collector, one of the main responsibilities of the *Karbary* is to distribute *Jhum* land among village members. The *Karbary* as spiritual and healing leader also represents and leads village spirituality in both special cultural and social festivals. The *Karbary* is responsible for arranging ritual programs of sacrifice and dedication to the village ancestors. For these processes, the *Karbary* needs to hold the special knowledge to explain the village's supernatural power²² (e.g., connection to spiritual realms). Thus, the *Karbary* is the main healer and religious leader, as well as the person who directly controls village tax collection, the results of which are then passed on to the *Mouza Headman*.

The *Karbary* is not a paid position; however, the *Karbary* receives gifts from the villagers and a token honorarium from the government. While the position of *Karbary* is not particularly economically rewarding, nor does it offer a significant amount of power, it is a position that offers rich spirituality and allows the individual to contribute to the community's everyday land, water, and environment management practices.

²² According to Elders, a *Karbary* should have proper knowledge on the community's spiritual beliefs, relationships, everyday cultivation practices, and ceremonies (such as harvest, marriage, childbirth, and death).

Headman. According to traditional customary laws, the *Headman* is the administrative head of a Mouza. A Mouza usually encompasses a number of villages with diverse Indigenous communities. The Community's traditional land, water, and forest management practices are greatly influenced and/or controlled by the *Headman*, who acts as an intermediary between the *Karbaries* and the *Circle Chief* (discussed below). Although the Community does not have its own *Headman*, the village *Karbaries* are connected with different Indigenous communities' *Headmen*²³.

The *Headman* selection categories and responsibilities are different from those of the village *Karbary* administrative position, and the Mouza *Headman* goes through a different selection process. Indigenous identity is the first selection criterion. According to participant Khyeng Elders and knowledge holders, their *Headman* is from another Indigenous community and has been selected through an inheritance system. The position has been exclusively inherited by men. In the data, leaders discussed that although the position was mostly selected through heredity, the *Headman* may come from a different community as is the case with the Laitu Khyeng. Such an arrangement is sanctioned on the basis of holding special knowledge about different Indigenous traditional customary laws. According to the traditional customary practices, the communities need to respect the *Headman* position whether or not the *Headmen* is from a neighboring Indigenous community.

As mentioned, responsibilities of the Mouza *Headman* are different from those of the village *Karbary*. The *Headman* collects taxes from the village *Karbaries* and passes them on to the *Circle Chief*. Aside from collecting taxes, the *Headman* is responsible for addressing any unsolved conflicts or problems in the village that the *Karbary* is unable to solve. The *Headman*

²³ The Laitu Khyeng village *Karbaries* are responsible to *Marma* (neighboring Indigenous community) *Headman*.

is also responsible for distributing forest, land, and water resources among the villages, and is tasked with advising the government District Commissioner (DC) in relation to taxes and other information. The *Headman* distributes community land and forest areas according to customary law and needs of the community. The community believes that although the traditional administrative *Headman* position is appointed, the selected person must be as neutral as possible in distributing land, water, and forest resources. If the community is not happy with *Headman* decisions and/or judgments, they can submit a complaint to the Circle *Chief* asking for justice.

Chief. The *Chief* is the head of the Circle and is known locally as the *Raja* (i.e., King of the Circle). The CHT is overseen by three Circle *Chiefs* who primarily work with the Bangladesh government forest, land, and Indigenous Ministries (Roy, 2000). According to Khyeng Indigenous Elders and knowledge-holders participating in the study, the three Circle *Chiefs* have direct connections to development agencies (e.g., NGOs, UNDP, UNESCO, Tabacoo Companies, and Micro-Credit Business) and forest management policies, but are not associated with policy making or policy administration (Adnan, 2004). Indigenous traditional customary laws dictate that the *Chief* is the highest authority presiding over Indigenous communities (Roy, 2000). Although the community does not have a direct connection with the Circle *Chief*, the village *Karbary* and the Mouza *Headman* are responsible to the *Chief*. The Circle *Chief* is responsible for overall forest management within the Circle's Mouzas and villages.

The Circle *Chief* position is primarily inherited and patrilineal, and the position holder is required to have an Indigenous identity. The Circle *Chief* is a respected position and the

holder is expected to be knowledgeable on Indigenous traditional customary laws and practices, as well as land management practices in his Circle.

One of the Circle *Chief's* main responsibilities is to collect taxes from the Mouza *Headman* and give a substantive portion to the Bangladeshi government. The *Chief* is also tasked with distributing forest, land, and water resources among Indigenous communities. In addition to resource distribution and tax collection, the *Chief* is responsible for resolving the villages' and the Mouza's unsolved conflicts according to traditional customary laws. The *Chief* has the power to solve problems that cannot be resolved by the initial two levels of leadership. The *Chief*, however, mostly works with the other two Circle *Chiefs* in the CHT.

Traditionally, the Circle *Chief* holds a significant role in protecting Indigenous spiritual and relational land, water, and forest management practices (Adnan, 2004; Chakma, 2010; Roy, 2000). The Elders explained in the data that the circle *Chief's* responsibilities also have been changed since the time of their ancestors, resulting from interactions both with colonial (British: 1757-1947) and post-colonial state governments (Pakistan: 1947-1971 and Bangladesh: 1971- present). However, Elders still view the circle *Chief* position with greater esteem than the mainstream state administrators. Elders and knowledge-holders emphasized in the data that proper knowledge about Indigenous communities' spiritual ceremonies and everyday management practices is the principal requisite for all three traditional administrative positions (*Karbary*, *Mouza Headman*, and Circle *Chief*).

Spirituality and management. Research participants were eager to illuminate why spirituality was an important factor in practicing land, water, and forest management. The researchers were told that the community's everyday management practices with water, land, and forest, were interconnected and aligned with their daily spiritual practices. For example,

Knowledge-holder Kasamong Prue Khyeng explained the relationship between spirituality and management stating, “If there is no spirituality, there is no Community. Spirituality represents for us taking care of our life and our environment.” He explicitly describes the connectivity between spirituality and management in the following poem (translated by the Methuei Chaing Khyeng):

Our spirituality is our Motherland,
Our spirituality is our hills, sky, water, and our heart.
Our spirituality always creates our relationships and our knowledge.
Our spirituality created us all in one family.
Our spirituality guides us how to maintain our relationships with land and water.

Community Elders and leaders explained spirituality in terms of various forms of *puja*:²⁴ for example, the *Bogle puja* (hilly land/*Jhum* land spirituality), the *Hanei puja* (water spirituality), the *Lung puja* (stone spirituality), the *Lokhei puja* (cultivation and production spirituality), and the *Soyttobill puja* (production feast festivals). The following paragraphs outline participants’ views on the relationships between various spiritual practices and the community land, water, and forest management practices.

Bogle puja. As indicated by Elders during sharing circle discussions, the *Bogle puja* was one of the representative spiritualties (i.e., mostly celebrated in the *Jhum* hilly fields). *Bogle puja* is also known as *Jhum* God. Elders believe that through the *Bogle puja*, the Khyeng community builds spiritual relationships with *Jhum* land, animals, plants, and other species. In order to honor the Mother forest and increase agricultural production, the Khyeng practice the *Bogle puja* at the *Jhum* fields and *Jhum* store. Through performing the *Bogle puja*, the

²⁴ The *puja* is a spiritual prayer or dedication to a supernatural power and/or to ancestors. Research participants believe the *puja* to be sacrifice, love, and relationships. For example, Elder Basa Khyeng explained: “*Puja* is our spiritual power, and it comes from our collective nature gods.” The significance of *puja* spiritual practice is connected to the protection of the community and the community’s relationships with the environment.

community believes it will be able to produce enough food for the community and will be able to provide adequately for animals. During the *Bogle puja*, the community sacrifices domestic animals in order to build relationships with *Jhum* (hilly) land, plants, and wild animals and *Binii dhan* (a special kind of paddy crop mostly used for spiritual purposes). According to Kasamong Prue Khyeng, sowing *Binii dhan* in *Jhum* land shows respect to the land and acts as a symbol of seeking permission. He added that “the Community do not start their *Jhum* production without seeding *Binii dhan* for the *Bogle puja*.”

Hanei puja. While *Bogle puja* is associated with land spirituality, the *Hanei puja* is described as connected with water spirituality. One of the main purposes of this *puja* is to show respect to the water god for using water in everyday lived-activities. The Khyeng believe that the water god is the source of all water. If the Khyeng community does not take care of their water sources, they may not survive. As indicated by Elder Kosomo Prue Khyeng, they may lose their “Mother-*Jhum*, Friend-animals, and Brother-waterfalls.” Elder Basa Khyeng reinforces this sentiment, describing the *Hanei puja* as a ceremony showing respect, honor, and protection for local water resources. The Khyeng celebrate *Hanei puja* during *Jhum* seeding and *Jhum* cultivation seasons. Elder Basa Khyeng explained that the Khyeng practice the *Hanei puja* three times during a year: during the New Year celebration, seeding time for *Jhum* cultivation, and *Jhum* and plain-land harvest. The community celebrates *Hanei puja* near canals since canals serve as a main source of drinking water and for other daily uses. Thus, the canals are revered in association with *Hanei gods*. In addition to *Hanei puja* celebrations occurring three times a year, the ceremony is also conducted if anyone in the village community becomes seriously ill. During *Hanei puja*, the community sacrifices domestic animals to the water

god to bless the community with water and to protect them from illness. The community believes the water god will protect members from sickness and critical health conditions. Leader Ukay Khyeng relayed in the data a prayer to this effect, asking of the water god: “please protect us from sickness as you give us life.”



Figure 4. Hanei Puja Celebration. The above photograph is Ukay Shing Khayang’s photo; this photo is showing Hanei puja celebration at community village.

Youth participant Ukay Khyeng explained that during *Hanei puja* (see Figure 4), the Khyeng community restrict access to their village. During these times, no one is permitted to exit the village or enter it, and nothing can be brought in from outside nor sent out. If anyone breaks this law, they receive a monetary citation.

Lung puja. The *Lung puja* spiritual celebration is described in the data by knowledge-holder Ching Shou Khyeng as honouring the significance of big trees within the community. Ching Shou Khyeng explained that traditionally the Khyeng community engage in this kind of spiritual celebration as a way of celebrating animals, production, trees, and others. A part of celebrating *Lung puja* involves the Khyeng community protecting the big trees in their village.

At the beginning of the New Year, the community celebrates *Lung puja*. Similar to *Jhum* land and water resources, Elder Basa Khyeng explained that big trees play a vital role in the maintenance and protection of community health, crops, and animals, and are therefore honoured through spiritual ceremony.

Lokkhi puja. The *Lokkhi puja* (Figure 5) is known as a cultivation and harvest spiritual celebration. The *Lokkhi* god is the protector who provides spiritual power toward cultivating land and creating solutions in times of crisis. According to coresearcher participant Nyojy U Khyeng, the *Lokkhi puja* is usually celebrated on Saturday evenings at the top of the hill ²⁵near the big plants. However, the *Lokkhi puja* can be celebrated every day, and thus each day is considered a spiritual day in the community. During this *puja*, the community sacrifices to the *Lokkhi* god locally-produced fruits, flowers, and foods. The villagers pray to the *Lokkhi* god for food sufficiency and for the protection of *Jhum* and plain land. Elder Basa Khyeng discussed that these acts of sacrifice and dedication were symbols of the harvest spirit in the community.

²⁵ This Top Hill is known as scared place to the community. It is situated within the Khyeng villages *Gogro Modrom* and *Gogro Mokh Para*.



Figure 5. Lokkhi Puja Celebration. This photo is from co-researcher participant Nyojy U Khyang. This photo shows Lokkhi puja at Khyeng village.

Soyttobill puja. The *Soyttobill puja* is a feast festival that takes place right after *Jhum* production as a way of honouring nature god(s). The *Soyttobill* feast involves preparing a dish that consists of a large variety of harvested foods in a big pot, symbolic of bringing together community members of all ages and genders to share the prepared meal. This act of eating together and sharing is a way of celebrating the foods produced, and emphasizing the nature of this *puja* as a symbol of collectiveness. According to knowledge-holder Kosomo Prue Khyeng, through the *Soyttobill puja*, the Khyeng community believes that all villagers (Elders, youth, and children) can collectively protect their food sources, as well as land, water, and animals.

On puja. The *On puja* has an important role in the community's decision-making processes. The community refers to wetland areas as *On* areas, which means that they will not be used for cultivation. In selecting *Jhum* land in hilly areas, the Khyeng community avoids

wetland areas; they believe wetland areas are significant food sources for insects, birds, and animals. The community sees *On* areas, particularly the waterfall areas, as a main potable water source for the Indigenous community. Participants discussed in the data that anyone who cultivates *On* areas would reduce the fertility of their land thereby producing a less ample crop as well as the fertility of the family. Through this and other examples Elder and knowledge-holder participants expressed that the Khyeng Indigenous community considers their spiritual knowledge as their scientific knowledge.

As stated above, the community believes that *On* (i.e., wetland) areas are not of high production quality; however, if anyone wants to cultivate *Jhum* on *On* land, they need to make sure that there are enough food source areas for the other actors/god(s), such as animals, insects, birds, and others. In order to use *On* land, the interested person needs to follow a number of rituals such as those indicated in the following scenario from a sharing circle conversation. First, the interested person needs to form a friendship with, and ask permission from *On*. Second, in order to obtain permission, the interested person is required to sacrifice a domestic chicken to honour *On* land, and have a feast with village members. According to Knowledge-holder Ching Shou Khyeng, the request for permission from *On* is recited as follows: “Oh my friend and brother, please protect me, my children, and my family. Please give us permission to have some foods from you. Please forgive me if I do any wrong.” Finally, the interested person needs to leave the *On* area if anyone in the family gets sick during the cultivation, as the community considers sickness a sign that the *On* has not given permission to cultivate the land in question.

In sum, it is clear from community Elders, knowledge-holders, and leaders that the community’s traditional land, water, and forest management (see Figure 2) aligns with their

spirituality. Participants emphasized that practicing spiritual and sacrificial ceremonies are connected with *Jhum* harvest, plain land cultivation, and water management. The researchers also learned that a good harvest was connected with *puja* and sacrifice rituals, and was considered an honour and a sign of a healthy relationship with the land and water gods. Any cultivation practices that dishonour the land and water gods, or do not foster healthy relationships with them are considered serious sins and sources of evil spirits. Such sins and emergent evil spirits can invoke the land and water gods to bring unexpected crises, not only to the particular person engaged in cultivation, but also to the whole community. Therefore, cultivation practices that honour the gods and maintain healthy relationships with them protect the community from future food crises and illness. Our research team also found from the second sharing circle conversation and individual discussions with Elders and knowledge-holders that building relationships and honoring supernatural gods are connected with a good harvest. The recipient of a good harvest is supposed to engage in a spiritual ceremony and to share with neighbors through offering a feast. Through these spiritual practices, the Khyeng community believes their environment, identity, and rituals are interconnected with spiritual practices. Therefore, the community prefers to introduce themselves as a spiritual community.

Traditional economy and management. The community's traditional economy was discussed by participants as one of the significant factors in detailing the community's environmental management. During the second sharing circle, Elders and knowledge-holders explain that the community observe a close relationship between management (everyday cultivation practices) and daily economic activities, such as food production, food exchange, local market transactions, and food preservation. These relationships rely largely, but not entirely, on local input and skills from within the community. According to protocols of the

traditional economy, decisions about purchasing various machines and minor equipment needed for economic activities are jointly made with other Indigenous and a few non-Indigenous communities. Data provided by Elders, leaders, and knowledge-holders are discussed below highlighting the relationship between the community's economic activities and environmental management.

The community *economic domains*²⁶ are spiritually interconnected with their land, water, and environmental management perceptions. Co-researcher participant Mathui Ching Khyang, depicted in her commonplace book the relationship between economic domains and management as “a flower ring.” Drawing from Elders’ teachings, she elaborated: “Traditionally our natural resources are our parents who take care of our everyday needs. We as an Indigenous community have grown up by our natural resource blessings.”

As mentioned previously, the community's daily food and nutritional needs are satisfied by their *exchange processes*. Community members exchange with each other resources such as bamboo shoots, banana stalks, and roots and leaves of various wild plants from forest and woodland. The community also collects various fruits from hilly land, and exchanges these in local village markets. In addition to *Jhum* cultivation, the community grows vegetables, oilseeds, cotton, and turmeric (a cooking spice) in forest/hilly land and sells the produce in the neighboring village. However, transactions within the local village market sometimes involve an exchange of goods or services rather than monetary currency. The forest resources have additional economic value to the community, providing housing, and fuel for cooking.

²⁶ Elders explained the economic domains such as sufficient foods, land, water, and forest resources that are available for each Khyeng family each year.

In addition to the cultivation and processing of forest resources, the community economy also depends on *wage-based* plain land crop production. A plough cultivation technique is principally used in plain land to cultivate wet-rice crops, winter vegetables, mustard, chilli peppers, and tobacco. Wage-based labour is also used in the husbandry of grazing cattle. Thus, in addition to the use of forest resources, a proportion of the community's economy is dependent on wage-based employment generated by plain land cultivation.

The community's fruit crops also play a role in the economy. Some of the community households (those who do not have access on *Jhum* land due to government reserve forest policies) are dependent on horticulture cash crops such as mango, banana, and orange. However, nongovernmental projects (e.g., brick field, tobacco, and profit-oriented wood plants) have created impediments to accessing markets, which have diminished opportunities for cash-crop fruit production.

Raising *livestock* constitutes another supplement to the economic base for the community. Cattle and pigs are the main livestock sources. In particular, pigs have significant economic value, as they are not available in mainstream Bengali markets due to the Muslim community's religious restrictions. The Indigenous communities use pigs often for cultural and spiritual festivals. The Indigenous communities also sell pigs to other Indigenous communities. In addition to spiritual and cultural uses and values, cattle have many other uses in the Khyeng Indigenous community. For example, cow dung is used as an organic fertilizer, and it is sold at the local market as a form of cooking fuel.

In addition to a place of daily spiritual practice and a reservoir for watering crops, local *water* sources provide an opportunity to fish as well as a place to raise ducks. Fishing is another major supplement to the economy, offering employment for both men and women. The

community's local water sources consist of two major canals spanning three villages; in these canals members catch fish for consumption and also to sell as a commodity at the local market.

It is evident in the data that traditional economic domains in the community are deeply interconnected with land and water management practices. It is clear from most participants – particularly Elders, knowledge-holders, and leaders – that the community's explanations of land, water, and management are different from the western meanings of management. Thus, according to participants, the traditional management can be summarized as their everyday relational and spiritual collective practices for themselves and their land, water, and forest resources.

Theme Two: The Community's Perceptions on Current Management

“I am very sad, seriously angry, and truly confused as consequences of the different agencies’ [the Bangladeshi government and non-governmental agencies] artificial, forceful, and discriminative land and water management projects on our Mother-Land.”

Elder Kosomo Prue Khyeng.

“I am a farmer who does not have land to harvest. We lost most of our cultivated land through the government's [Bangladeshi] management projects [limber and robber forest plantation, tobacco plantation, brick field]”

Knowledge-holder and School Teacher Ching Sho Khyeng.

The sub-themes discussed under theme two of the chapter arose from data analysis addressing issues directly corresponding to research question two: namely, to what extent were the community members affected by introduced land and forest management²⁷, such as those promoted by the government, NGOs, commercial companies, and multinational corporations? Through the research process, the research team endeavored to explore the community's

²⁷ According to Elder and knowledge-holder participants, management is discerned from four governmental and non-governmental projects underway in the community: Reserve forest, tobacco plantation, lumber plantation, and Brickfield industrial company. We used the term ‘project’ for exploring management policies associated with these projects throughout the data.

perceptions of the outsider agencies' land, water, and forest management projects, rather than directly examining the agencies' ideas and policies regarding management. In addition to the use of sharing circles and individual story sharing, data analyzed in response to the question were drawn from photovoice pieces and individual stories shared by youth. Three sub-themes emerged from participants' stories: the first centres on the community's perceptions of current management projects (governmental and nongovernmental agencies' land, water, and forest management projects); the second details the projects themselves, contrasting external administrative tenets with traditional Indigenous practices (specifically, commercial Brickfield industrial company project, the for-profit tobacco plantation project, the wood-plants plantation and reserve forest projects); the third illuminates visible and invisible consequences of the above-mentioned land-management projects, including effects impacting women and species populations. The following section discusses the above three themes and their impacts in relation to community perceptions.

Sub-theme one: The community's perceptions on current management. The first sub-theme in theme two that emerged from the data illuminates the community's perceptions on the different agencies' (Bangladeshi government and non-governmental agencies) land, water, and forest resource management projects within the community. Toward explaining the community's perceptions on current management practices, participants²⁸ often told us that rather than contributing to the community's security, the Bangladeshi government and non-government agencies' management projects engendered feelings of exploitation, frustration, fear, and danger for the community, thereby posing a formidable challenge to the community.

²⁸ In some parts of this chapter we have included participants' information, and in some parts we have not disclosed participants' information in accordance with their request.

A sentiment of *exploitation* was frequently conveyed by participants when discussing government and non-government land and forest management projects in the community. For example, youth leader, activist, and co-researcher Hla Aung Prue Khyeng wrote in his commonplace book that, “The current management projects became tools to grab our land.” The various agencies’ forest and plain²⁹ land management strategies are perceived by members of his community to be mechanisms of exploitation. Similarly, knowledge-holder Kasamong Prue Khyeng linked non-Indigenous management projects to struggles suffered within the community: “today we are experiencing food crises and poverty as a result of our government imposing the exploitative land and water management projects on our traditional land, water and forest. All of these current projects are nothing but exploitation to us.” Likewise, most other participants pointed out that since forced management projects became commonplace in their community, exploitation also became evident (i.e., lack of access to cultivated lands, foods, poverty).

The data revealed that *frustration* was also a common response of community members reflecting on governmental and nongovernmental management projects. Leader, activist, and co-researcher Kray Prue Khyeng characterized the current management projects as “a root of frustration to us.” Two predominant aspects fuelling the participants’ *frustration* include: outsiders’ power over Indigenous community members, and efforts to maximize profits from the community’s forest. For example, knowledge-holder, Ching Sho Khyeng, stated that the current management projects “are not only hopeless to us, but also are seriously oppressive to our Mother nature.”

²⁹ The plain cultivated area is mostly situated beside hilly areas (Adnan, 2004).

Current land and forest management projects enacted within the community elicit a profound *fear* that spiritual connections and relationships with trees, birds, animals, and plants are being damaged. Co-researcher participant Mathui Ching Khyang depicted the various agencies' management projects as "evil snakes to us [a symbol of fear within the community]." She described the government and development agencies' projects as the "evil snakes" because the "management projects have been intentionally abusing our Mother Nature and displacing us." Elder Kosomo Prue Khyeng reiterated Mathui Ching Khyang's characterization that such projects are a source of fear within the community, stating: "We pass our days with serious fear for nightmare projects on our ancestors' land." Participants stressed that this fear continues to grow as the challenge to maintain the community's traditional management practices becomes increasingly difficult.

Current management projects are also explained by participants in terms of representing a *danger* to the community. For example, one Elder³⁰ emphasized that the different agencies' management projects are designed "to cut and clear our forest by the name of unproductive land. These projects are dangerous as they are grabbing our Mother-land to displace us." Participants detailed how the community's forestland and water bodies were transformed into sources of profit for the different agencies' projects. For instance, the knowledge-holders emphasized that most of the projects have created serious challenges for the community's traditional management practices. Co-researcher participant Mathui Khyeng questioned outsider profit making processes saying:

Who is deciding our practices and management projects for us? Why do they not count our knowledge on our development projects? Who is responsible for

³⁰ Due to the politically sensitive nature of speaking about government and non-government management projects, some participants wished to remain anonymous in the dissemination of data on the topic.

creating poverty in our community? We know our government knew this, but they would not solve this. Our government wants to keep us unprotected through their artificial management projects.

Participants emphasized that management and profit-making were synonymous for outsider management organizations.

It is clear from participants' contributions that the various agencies' conceptions of management diverge from the community's understandings and practices. Taken together, the detrimental impacts of current management projects (exploitation, frustration, fear, and danger) challenge the legitimacy of the projects and the organizations administering them. Participants discussed their objection in terms of settler occupation through which land grabbing, profit making, and displacement are achieved. Elder Basa Khyeng explicitly argued that the different agencies' anti-community management projects have rendered the community essentially unsustainable. Together with Elder Basa Khyeng additional Elders and leaders outlined how various agencies' management projects contributed to the unsustainability of the community through diminishing the community's ability to provide for themselves and lead full lives.

Sub-theme two: Current land, water, and forest management projects. Sub-theme two emerged out of the following question raised by co-researcher participants: "Why did the Bangladeshi government and non-government land, water, and forest management projects become painful for the community?" In exploring this question, we heard many compelling stories from Elders, knowledge-holders, leaders, and youth participants. The stories shared by participants are discussed below, illuminating the community's views on particular management projects, along with consequences suffered by the community. The projects most commonly referenced in the data include the following: the government administrative

structure, the Brickfields, the tobacco plantations, the profitable lumber plantations, and the reserve forest projects.

The imposition of the Bangladeshi administrative structure. The imposition of the current State administrative structure on the community's traditional administrative structure is discussed by participants as a form of oppression. One leader expressed that while the Chittagong Hill Tracts (CHT) traditional Indigenous administrative structure started to weaken during British colonial rule, traditional administrative structures have been more aggressively undermined during the Bangladeshi governance period (1971-present). A knowledge-holder similarly emphasized the impact of the Bangladeshi administration during the 1980s, significantly disempowering the CHT Indigenous community's traditional administrative structure. Evidence of this power grab can also be found in the writings of scholars Adnan (2004), Chakma (2010), and Roy (2001, 2002, 2008) who illuminate the oppressive impact of State administrative projects on the CHT community.

A power disparity between the State and traditional Indigenous administrators became evident through discussions with participants. During the first sharing circle, knowledge holders expressed that the power disparity between State and Indigenous administrators was created and perpetuated by the Bangladeshi government. One Elder outlined the structural arrangement through which power was unevenly distributed to Bangladeshi administrators:

According to a hierarchy of administrative power, the CHT Indigenous communities' natural resource areas were divided into five state administrative structures, including: the District Area [i.e., numbers of *Thanas*], the *Thana* area [i.e., numbers of unions], the *Union* area [i.e., numbers of *Mouzas*], the Mouza area [i.e., numbers of villages], and the Village area. The position of Circle *Chief* [i.e., the Indigenous traditional administrative head] became less powerful for Bangladeshi State formed administrative structure during the Bangladesh period (1980's) as the Deputy Commissioner [DC] was converted into the head of the district for judicial and administrative power.

Similar findings are disseminated in studies conducted by Adnan (2004), Mohosin (2000), and Roy (2000) confirming that through the appropriation of control over CHT land, forest, and water resources, the Bangladesh government has diminished the Indigenous traditional administration's power and efficacy to serve the community.

Participants expressed their contention that decision-making power rooted in their ancestors had been taken from the community by State administrators. For instance, one leader outlined how the Bangladeshi government has transferred land-management power from Indigenous leaders to the District Commissioner (DC). He argued that through this process, the state administrators' structure became a uniquely powerful authority, controlling the community's natural resource and managing processes. A result of this process, the traditional Indigenous administration become mere tax collectors for the government.

As revealed by participants' stories, the Bangladeshi government's administrative structure presents a significant challenge to the community's traditional natural resources management practices. The community Elders expressed that the State administrators' activities have over time not given importance on the community's traditional administrative structure and traditional management practices. Here we discussed how Elder, knowledge-holder, and leader participants viewed the current Bangladeshi government administrative structure over the traditional Indigenous administrative structure. We learned from most participants perspectives that the imposition of the Bangladeshi state administrative structure over Indigenous administrative structures was characterized as a campaign of force, oppression, and weakening of community stability and self-sufficiency.

Participants described the imposition of State administrators' decision-making processes over Indigenous decision making as a negative *force* within the community. For

example, one community leader³¹ argued that the state administrative structure is a “force to transfer our traditional land and water management decision making power to the state’s administrators.” The leader also explained that the imposed force by state administrators has negative impacts on the community’s traditional management practice. An Elder added, “This force to control our natural resource management rights and decision-making powers is policy making.” Participants frequently argued that state administrative procedure and projects made Indigenous administration less powerful.

It is clear from conversations with community Elders and knowledge-holders that the Bangladeshi government, through the State administrators, has helped outsiders³² to appropriate and control Indigenous communities’ natural resources, management rights, and decision-making power. One of the Khyeng schoolteachers described the transformation resulting from State interference as manipulating the community’s land and forest resources as “profit-making tools.” Therefore, the current imposition of State administrators is considered a serious detriment to the traditional administrative practices and the long-term health and sustainability of the community.

The Brickfield project. The private Brickfield project is identified in the data as one of the major and most pernicious projects in the community. The community identified that it was one of the largest wood-burning brickfield manufacturers within the *Bandarban* district.

Studies (Adnan, 2004; Roy, 2010) also found similar findings that the growing number of Brickfields in Laitu Khyeng Indigenous community not only affects mental and physical

³¹ As with the political sensitivity perceived in discussing current governmental and non-governmental management projects, some participants preferred to remain anonymous when speaking about government and non-government agencies themselves.

³² According to Elders and knowledge-holders, the word ‘outsider’ refers to non-Indigenous Bengali: those who don’t live in the community. In other words, this encompasses Bangladeshi State administrators who are mostly from outside of CHT (Adnan, 2004).

health, but toxic exhaust from production affects crops and plants in adjacent areas. It is one of the major profit-making activities in the community, which is supported by the government administrators. Brickfield production is driven by demand from urban and suburban construction activities, as well as road-building projects implemented by the government and private companies (Adnan, 2004). Elders and leaders emphasised that the Brickfield project was a corporate driven problem, not only in terms of the detriment to the community, but also in terms of legality, extraction of profits, appropriation of land, and pollution of the environment. The community's views on the project are highlighted below, providing a contextualized representation of participants' perceptions of government interventions in resource management. As Elders emphasized, the Brickfield project has contributed to not only a large loss of cultivated land, plant diversity, and grazing fields, it has also led to a crisis in domestic animals – impacting chickens, ducks, cattle, and pigs.

Notably, Elders depicted the Brickfield industrial enterprise as the most anti-community project on the community's cultivated plain-land. Co-researcher Hla Aung Prue Khyeng expressed in his commonplace book that the Brickfield project is a “killing project for our health and our cultivated land.” Outlining the community's struggle with the project, Co-researcher stated:

This Brickfield Company took many of our cultivated lands forcefully. We have been fighting to stop this killing project, but the Bangladeshi administrative forced us to stop our movement by saying that if we make any movement against this Brickfield, the local police authority will put us in jail with fake allegations.

The co-researcher Hla Aung Prue Khyeng also indicated that the Brickfield project significantly reduced the community's decision-making ability, appropriated cultivated land, and created serious unemployment in the community.

During the data collection process, Brickfield was the largest industrial private company in the community; it was run by an outsider Bengali owner and operated by settler Bengali workers. Community leader and school teacher Mongla Pure Khyeng shared his reaction to the Brickfield project: “I feel insanity whenever I see this Brickfield on our Motherland. Every year hundreds of new settler Bengali workers are coming here.” Participants discussed that through the Brickfield project outsiders have become more economically and politically powerful in the region, displacing the power of Indigenous peoples. An example of the power of the local bureaucracy, knowledge-holder Kasamo Pure Khyeng explained, “The local court ordered to stop this project, but the local government administrators have been giving support to continue this project.” Lamenting this circumstance, the knowledge-holder was very upset and sadly explained, “outsiders come to our community to make a profit and leave our forest and our relationships in danger.” Participants expressed that there are thousands of Brickfield workers coming from outside of Chittagong Hill Tracts (CHT). Most of them do not have any knowledge about Indigenous cultivation culture, rituals, and traditions. Knowledge-holder Ching Shao Khyeng detailed the significant consequence of this land appropriation in the following statement:

60% of our community plain lands food's sources were coming from the Brickfield area prior to Brickfield Company. We used to cultivate paddy crops, vegetables, and fish in this area. Most of us did not have food crisis in our family. Now we lost both our land and our forest for this project, and we also cannot use our water as water is polluted now as a result for using water in the Brickfield.

An Elder participant also explained that the owner of the Brickfield forcibly bought Indigenous people's land and also used Bangladeshi administrative power over the community to force the sale of the cultivated land.

To the youth participants in the study, the Brickfield is perceived as a persistent curse imposed upon the community. The youth participants explained their most recent community youth movement against the Brickfield: an action that was covered in the national news media³³. In this news coverage, the national reporter asked the Bangladeshi administrator when the illegal Brickfield industrial company would cease operation. According to the report, although the Bangladeshi government administrator acknowledged that the Brickfield Company was started without community consent, the government administration did not promise to take any initiatives to stop this project

The Brickfield project has led to significant poverty within the community. The research team observed that the community's livestock grazing areas have significantly diminished through the development of the Brickfield industry. One account of this loss, provided by schoolteacher Mongla Prue Khyeng, highlights the decline of domestic animals, such as cattle, pigs, sheep, ducks, and chickens. Reinforcing the point, Elder Okko stated, "The brick field in our village created serious poverty in the community; 60% people lost their cultivated land for this project."

Knowledge-holder and school teacher Ching Chau Khyeng explained how the Bangladeshi government administration has violated the Bangladesh forest laws by giving permission to outsiders to develop this project. He illuminated that according to the *Bangladesh Forest Department Policy* (BFDP):

The Brickfield industrial company cannot be built within five kilometers of forest area, but our village's Brickfield industrial company is within half a kilometer of forest area.

³³ Retrieved March 11, 2015, (Prothom alo: Dec, 26, 2013) <http://www.prothom-alo.com/bangladesh/article/108448/>

Similarly, youth leader, president of Khyeng Student Council, and co- researcher participant Hla Prue Khyeng explained in his commonplace book that local administrators violate the country's education and cultivation laws by issuing a licence to the Brickfield company – owned and operated by outsiders – though the industrial site is located within 5 meters of primary school and 50 meters of cultivated land (see Figure 6).

Participants outlined details of how the Brickfield industry introduced harmful pollutants into the community, strongly condemning this outcome. For example, knowledge-holder Kasamong Prue Khyeng said:

The Brickfield project has been creating high *carbon monoxide*, *Fluoride*, and *Sulphur* in our community. We have been experiencing serious health diseases over the last ten years from this project, which we had never experienced before. As you know, just yesterday, one young boy died [during our field visit: Feb – June 2013] from an unknown disease. Now my wife also has cancer.



Figure 6. The Brickfield in the Community. These photos are from co-researcher participants Nyojy U Khyang and Hla Aung Prue Khyeng. Top left side photo depicts the Brickfield that is situated in cultivated-land, and bottom left side photo is showing that the Brickfield is close to the community primary school. Top right side photo depicts that the Brickfield is situated within plain-land cultivation, and the bottom right photo shows the community's forest wood is used in the Brickfield.

Building on this, Elders expressed that due to the close proximity of the Brickfield to the school, many children have experienced breathing problems, and according to knowledge-holder Ching Shao Khyeng, have contracted “other diseases that we did not know before.” Notably, Co-researcher Hla Aung Prue Khyeng expressed that “many parents believe this project causes severe pneumonia and meningitis among children. Since we [community people] do not have another school within five to six kilometers, villagers do not have choice.”

In summary, it is apparent from participants' discussions that the Brickfield industrial company negatively impacts the community in a multitude of ways, including reduced fertility of the plain-land, polluted sources of drinking water, increased deforestation, and possible consequences related to child health. The data have also revealed that the project has become a major cause of new settlement in the community.

Profit oriented forest management project. The Bangladeshi government's second largest management project discussed by participants involves a series of for-profit lumber plantations (i.e., planted trees in place of the natural forest), driven by government forest management agendas (see Figure 7). During the third sharing circle, the majority of participants indicated that the profit-driven plantations are not only detrimental to the community's environment, but also seriously impact the community's food sovereignty and spiritual practice. Historically, two forest management projects, owned by both government and private companies, have significantly impacted the community. The first project is a government timber plantation known as the *Reserve Forest* (RF), which also involves arrangements with illegal logging companies. The second project is run by the *Bangladesh Forest Industries Development Corporation* (BFIDC), a private corporation designed to make a profit by replacing natural forestation with commercial forests. Participants' views on these two projects and their negative impacts on the community are discussed below.

The government RF is the major forest management project located within the community. An Elder explained that a large area of traditional forestland was designated as RF during the post-colonial period by the successive states of Pakistan (1947-1971) and Bangladesh (1972-present). Knowledge-holder Ching Shao Khyeng illuminated that according to legislation around Bangladesh RF, the local community does not have access to their

ancestors' land. Community leader and activist Nyojy U Khyeng explained how the RF developed in the Laitu Indigenous community: "we had 3000 hectares of land which was known as the Khyeng complex. This large amount of land [was] declared as RF by post-colonial state governments [i.e., Pakistan and Bangladesh]." The RF enables illegal logging for outsider non-Indigenous people through forest department administrative support. Co-researcher participant and youth leader Mathui Ching Khyang explained in her commonplace book how the government RF project changed her community's economic balance. She wrote, "The RF is not only a mechanism for taking our forest from us, but also it become a place for illegal logging and fuel wood supply for the Brickfield." Elders and leaders expressed that the illegal logging has increased within the RF due to the political power acquired by illegal logging interests in relation to the Bangladesh forest department. A leader argued that "In most cases, the logging companies' owners have connections with local police and the forest department. For these reasons, the community members cannot do anything."

The second major forest management project in the community discussed by participants is operated by the BFIDC. The project's main objective is to make a profit by planting cash-crop lumber plantations within areas in which natural forest has been clear-cut. Elders explained that the BFIDC is a privately owned company, and most of its Bangali owners are from an external non-Indigenous community. According to the co-researcher participants, three of these owners command more than 60% of profitable lumber plants in the community's forestland. Elders and knowledge-holders explained that the Bangladeshi government administrators support the outsiders in their grabbing of the community's forestland. One Elder said that "the outsider owners are politically powerful; they forcibly occupy most of our forest

resources and *jhum* lands. They cleared our natural forest area and planted profitable *Segun* [*Tectona Grardis-Teak*].”

The *profit plantation* project was introduced primarily to appropriate Indigenous land in order to generate profits for outside interests. An Elder explained that the plantation owners and supporters acted as direct participants in the forced seizure of the community’s forest and cultivated land enclosed within the project. For instance, a community knowledge-holder explained:

We had hundreds of hilly mountains, we used to cultivate *jhum* on these lands and we did not have a food crisis in our community. The outsider Bangali people came to our land and took ownership of our Mother-Land for our lack of knowledge on the Bangladesh-land laws. The Bangali administrators are not interested to know the Indigenous peoples’ relationships with our Mother-forestland.

Building on this, knowledge-holder Ching Sho Khyeng detailed how Bangali-owned lumber plantations have destroyed traditional food cultivation systems; he stated: “in my village the profitable plantations, on our traditional forestland, destroy our traditional crops such as: paddy, banana, maize, sesame, cotton, potato, and pumpkin from our land.”

The BFIDC and RF agencies have prioritised *profitable wood plantations* over the Indigenous traditional forest plants and *jhum* cultivation. The new profit-driven plantations in the community include species such as: *Segun* (*Tectona Grardis-Teak*), Rubber (*Hevea Brasiliensis*), and Gamari (*Gmelina arborea*). Such forest management projects are known by the government as green plantations, and typically grow woody tree species. According to Elder Kosomo Pure Khyeng, the government forest department and private companies cut down the forest to create new timber plantations for future state economic holdings without community consent. He further argued that monoculture plantations, initiated by the Bangladeshi government forest department, have destroyed the community’s traditional and

spiritual forest³⁴. The Elder explained further that it is an “artificial forest” plantation project that only created “monocultures of exotic species, and destroyed our Mother forest biodiversity.” Co-researcher Mathui Ching Khyang wrote in her commonplace book that “the BFIDC does not have space for traditional animals, birds, and plant diversity. It produces only one particular profitable wood plant [Segun].” The community’s species diversity has been significantly reduced as a result of the BFIDC, the government RF, and the illegal logging companies. Elder Kosomo Prue Khyeng stated that many traditional plants, animals, and birds are going extinct due to the projects. Elder Kosomo Prue Khyeng emphasized that all of the agencies “use clear-filling [cleaning natural forest and growing profitable plantations] methods in community forest.” Elder Basa Khyeng added that more than 100 kinds of plant species were removed from the community’s forest areas at the hands of the BFIDC, RF, and the illegal logging companies. Clearing natural forest in order to plant commercial crops has led to serious soil erosion in the forested land.

Current forest management projects (both RF and BFIDC) have caused serious repercussions concerning the community’s drinking-water sources. Knowledge-holder Kosomo Prue Khyeng detailed how the for-profit woody trees project created a negative impact on the community’s drinking water:

I can remember, in 1992-1995, we used to get our drinking water if we could dig 1-2 meters of soil. Now for the lumber plantation project, we need to dig 200 to 300 meters of soil for drinking water. Since digging for water became expensive, we have been facing difficulties for drinking water and cultivation. Now, we need to walk for 1-2 kilometers for drinking water, and need to wait for rain to cultivate.

³⁴ According to Elders, the community has a spiritual connection with the forest. The forest is considered a god who provides cultivation space, drinking water, and a spiritual space for everyone.



Figure 7. Profitable Plantation Project over Natural Forest. This photo is from Hla Aung Prue Khyeng (co-researcher participant). The top part of the picture is indicating commercial profitable plantation, and bottom part of the picture is showing natural forest. This picture is a representative of many hills in the community.

Elders, knowledge-holders, and leaders concurred that *poverty* became widespread within the community as a result of the government RF and private BFIDC management projects. One Elder stated, “both government and private owners do not care for our natural forest, animals, and diversity. They just see our Mother-forest as profit making place.” He further explained how the different agencies created poverty in their community: “We used to get all of our foods from our forests, and did not need to go to outside market for anything. Now due to this artificial forest management, we cannot cultivate our foods and do not get animals for hunting.”

It is evident in the data that participants are united in their condemnation of non-Indigenous forest management projects – the BFIDC, the government RF, and the illegal logging – imposed upon their community. Principles of traditional management and natural forest diversity have been ignored by both the BFIDC and the government RF agencies. The

projects have not only undermined Indigenous traditional land-management practices, but they have also created a number of negative impacts, such as loss of Indigenous land; obliteration of natural forest diversity; food and water crises in the community; and destruction of relational and spiritual places.

The tobacco plantation. The production of tobacco was discussed by participants as the third largest cash crop introduced into the community. A number of national and multinational companies have established operations within the community, including the *British American Tobacco Company*, *Abul Tobacco Company*, and *Virginia Tobacco Company*. Elders expressed that the national and multinational tobacco companies have forcibly taken over the community's fertile plain-land in order to produce tobacco for export. Participants explained that most of the tobacco companies played an active role in not only destroying the fertile cultivated land, but also expanding disease and deforestation in the community.

Participants illuminated that tobacco cultivation began in the community through a series of oppressive strategies. Knowledge-holder Ching Sho Khyeng explained that a result of families being forced to produce tobacco on their cultivated land, they have become dependent on the market for their daily provisions. The knowledge-holder claimed that more than 30% to 40% of Khyeng families became impoverished as a result of the tobacco project. Community Elder Basa Khyeng characterized the introduction of tobacco within the community as a condition of "serious exploitation;" he stated that, "this project has been creating 'a cave' in our community" through a loan business³⁵ so that "we cannot come out from this oppressive process." During the data gathering process, participants reported having to take loans in cash

³⁵ Non-governmental micro-credit business in the community (Adnan, 2004).

and in kind from traders and moneylenders who exploited them by imposing onerous terms and conditions on loan payments.

Elder Okko Khyeng expressed that tobacco plantations, as a profit-making enterprises, represents “a serious danger for us.” He elaborated on this danger through stating that the tobacco plantations are “damaging our health, spiritual practices with our land, foods sufficiency, domestic animals, and soil fertility.” Similarly, co-researcher participant Hla Kray Prue Khayang referred to tobacco cultivation as “serious health danger,” and although “Most of the villagers did not know its negative impacts at the first time. Now, we are experiencing serious negative health and environmental impacts on our community villagers after five years of a tobacco plantation.” The Khyeng school teacher Mongla Prue Khyeng revealed that the tobacco companies routinely use children as a form of cheap labour. Confirming this, knowledge-holder Kasamong Pure Khyeng described worker demographics witnessed at a typical tobacco operation: “If you go to every tobacco plant field and burning house you will see most of the workers are our children, they are working along with their parents all day long.” He added sadly, “You will find many family members have been suffering serious unknown diseases. We do not know these diseases’ names, we never experience before.”

The tobacco plantations have also caused serious *deforestation* of the community’s forestland. The three villages have eight tobacco leaf burning houses, and these burning houses continuously use forest wood for burning several tons of tobacco leaves in a span of four to five months each year (mostly during the spring). According to Elder Basa Khyeng, “Each day one tobacco burning house needs more than 100 kilograms of firewood, and this turned almost a ton per day for eight burning houses.” Elder Kosomo Prue Khyeng explained that all of the firewood comes from the local community’s forest. In most cases, he emphasized, the tobacco

companies use this large amount of firewood without informing the Bangladesh Forest Department. However, the tobacco companies have the tacit support of local administrators. Female leader, activist, and co-researcher participant Hla Kray Prue Khayang, provided an estimate in her commonplace book regarding the link between the tobacco companies' firewood supply and deforestation:

Each month one burning house uses almost three to five tons of forest woods, and in a season one burning house uses 18 to 25 tons of forest woods. On average, the 8 burning houses use 150 tons of firewood from three Laitu villages. This large amount of firewood comes from our forest resource, in most cases by illegal logging.

According to Elder and *Karbary*³⁶ Kosomo Prue Khyeng, resulting from their destructive practices, tobacco plantations in the community have created serious *poverty*. He explained how community members got involved with the tobacco plantation projects and became impoverished as a result: “most of the families obtained loans in their crisis moments and/or sometimes tobacco companies have given loans forcefully with high interest.” According to Elder Okko Khyeng, most of the companies started giving loans under the pretext that, “you will not get loans in your crisis moments, if you do not take loans now.” In most cases, families were then unable to pay back their high-interest loans through limited *jhum* cultivation. Co-researcher participants expressed that private tobacco companies' loans have a high interest rate: in most cases 30% to 40%. Thus, most families (those who borrowed during the crisis) struggle to rise above debt linked to tobacco cultivation. Most of the villagers who obtained loans from the tobacco companies are now forced to grow tobacco on cultivated land previously designated to producing sustenance for the family and community.

³⁶ Village leader.

In addition to adverse effects on the economic and agricultural security of the community, the tobacco companies create a *great risk* to the community's health, particularly impacting the health of the community's children. As related in participant observations, children are working in tobacco plant fields and tobacco burning houses. Elder Basa Khyeng illuminated how health was further integrated with Khyeng families' reliance on credit issued by tobacco companies; he explained, "If we need to find out our diseases and take medication, again we need to borrow money from tobacco companies. We do not have a choice; we are in a cave now."

Elaborating further the effects on community health and food security, participants expressed that the tobacco plantations *reduce* plain-land fertility and contaminate the community's water sources. Tobacco farmer and knowledge-holder Kasamong Prue Khyeng explained that contamination derives from tobacco farmers' need to use high quantities of chemical fertilizer three to four times a year, and in his assessment, "This strong chemical highly reduces our plain-land soil fertility." Likewise, a second tobacco farmer and Elder stated, "if the land is used one time for tobacco cultivation, we cannot produce again for our foods production within next three years." The Elder also indicated that many community members cannot use local the water source due to high levels of contamination. Elder Basa Khyeng confirmed the restricted use of water resulting from tobacco field contamination:

We used to use our local water source for our everyday needs before tobacco plantation project in our land. Now we cannot use our local canal water source near tobacco plant area. We need to go other villages for everyday water uses.

In sum, participants expressed that the community is at the margin of the poverty line as a consequence of the tobacco project. Co-researcher participant Hla Prue Khyeng wrote in his commonplace book that the tobacco project has "on one hand destroyed our cultivated land and

our health, and on the other hand, demolished our forest resources.” Similarly, Elder Okko Khyeng asserted that, “The state administrators are responsible for this anti-community tobacco plantation project in our land, and its outcomes.”

While most participants connect current management projects to visible negative impacts imposed upon the community, some appear to privilege also the benefits associated with such projects. One Elder³⁷ said that “in our community there are some Indigenous people have benefited from the government and non-government projects for their poverty. Some of the Indigenous you will find who talk for the government projects.” Offering a possible qualifier to this statement, a knowledge-holder explained why some of the Indigenous people promote anti-community projects by stating:

During poverty or sickness those [Indigenous] who took a loan and got benefits from various projects owners [e.g., Tobacco, Brickfield], they were not able to return. These Indigenous people [those took a loan from companies] have to talk for anti-community projects; otherwise, they have to pay back their debt.

Using examples from participant conversations the researcher team learned that the current land, water, and forest management projects (both governmental and non-governmental agencies) were far different from the community’s traditional management practices. Most of the participants claim that the current management practices have created not only the above-discussed visible negative impacts, but also invisible impacts on the community’s everyday life.

Sub-theme three: The invisible negative impacts. Thus far, we have discussed negative impacts created by the Bangladeshi government and non-government land and water management projects on the community. Although some of the less visible negative impacts

³⁷ A request for anonymity by some participants also extended to statements made involving members of the community.

overlap with the visible, we were advised by Elders and knowledge-holders to include an additional section in order to discuss additional themes from the data. In particular, negative impacts discussed by participants centered around the effect on women in the community and on traditional forest species: for example, addressing topics of forced migration and traditional species extraction. In this sub-theme, the Elders and knowledge-holders re-emphasized were women's disempowerment, invisible displacement, and losing traditional species diversity, which were discussed under sub-theme one and two above.

Women's disempowerment. As illuminated by most female participants, stories addressing the disempowerment of women are among the most compelling and painful, resulting from the various agencies' land, water, and forest management projects. According to female Elder Shoi Khyeng, the privately owned Brickfield project is main barriers to women's participation in traditional cultivation practices and educational opportunities. The Brickfield industrial company has undermined the community's traditional collective work environment. Co-researcher Hla Kray Prue Khyeng explained that traditionally the Khyeng used to work together (i.e., all genders and ages) from early morning to evening; however, this collective working environment recently changed with the introduction of the Brickfield private industrial company. This co-researcher participant also explained how the Brickfield industrial area became threatening due to a large number of male settler labours. Since the Brickfield is situated between three villages, the community women cannot go to work or to other villages without passing the Brickfield area. Female Elder Shoi Khyeng expressed that many of the women reported having uncomfortable experiences with the male labourers. Hla Kray Prue Khyeng further details the danger posed by the Brickfield workers: "community people fears outsiders non-Indigenous labourers, who would often sexually assault our women even in day-

time; they [the Bangali settler Brickfield workers] are a big number, we cannot protest them. Another co-researcher participant Mathui Ching Khyang explained how the workplace has become constricted for females in the community: “I am seriously angry for this Brickfield. I cannot do anything but cry. It [Brickfield] grabbed our working space and freedom.” A large number of Bangali settlers became a barrier to the community’s traditional practices. We have to keep silent or stop to go to work for them. We are scared to go to our *jhum* and plain-land.” Co-researcher participant Mathui Ching Khyang emphasised further how the Brickfield become a source of fear for her:

Everyday when we pass this area we feel seriously scared. We are scared because if any Banglali worker touches us while we are passing this area. We are afraid and ask ourselves, will we be able to return to our home safely? When we think of this Brickfield, we cannot sleep silently at night.

During our fieldwork, we³⁸ witnessed lots of community women who did not feel comfortable passing the Brickfield area to get to the forest area for *jhum* cultivation work.

Invisible displacement. Participants expressed that the Bangladesh land-management projects are indirectly forcing Khyeng women to migrate into city areas to perform cheap garment labour. A knowledge-holder participant – father of garment workers – cried and shared painful stories of the reasons he had to send his daughters to secure garment-production work. The participant explained: “Since our *jhum* land and plain cultivated lands became limited for the government land and water projects [e.g., Brickfield, lumber plantation, tobacco plantation, and RF], we do not have a choice; we have to send our children for garment work in the city.” This knowledge-holder participant was continuously crying and asked:

Who does want to send their children for garment work? They [the Brickfield, the Reserve Forest, and the tobacco companies] grabbed our ancestors’ land. We do

³⁸ Co-researcher participants’ observation.

not have land to cultivate. I cannot feed my family. I did not have a choice without sending them for low paid jobs.

He further explained that even though garment factory labour is low paying, exploitative, and abusive, due to the village's limited forest resources, the family was forced to send their children to work in a garment factory:

We cannot see our daughters for a long time, they cannot afford to come to see us. Our daughters are working 12-18 hours a day but get 70 Taka³⁹ [less than a dollar per day], cannot even eat properly, they mostly do not have weekend and holidays, live with other 20 workers with limited bathroom and cooking facilities. We also cannot feed them, they want to come back but we do not have work in the village.

The knowledge-holder related the view of her daughters⁴⁰, exemplifying the process of indirectly forced migration through sharing her migration story:

It is very painful to sit at home with very limited work and food. Though we do not want to go for low paid garment work, as we do not feel empowered as we have before in our village community, we do not have a choice. We need to feed ourselves at least.

It is apparent from most of the women participants that current land and forest projects have created serious negative consequences for women, including impacts on women's decision making ability, working space, freedom of movement, and access to cultivated land.

The community, like other Indigenous communities in the Chittagong Hill Tracts (CHT), used to be a community that empowered women⁴¹. Participants explained that reduced *jhum* production, due to the RF and for-profit plantation, has negatively influenced the community's

³⁹ The name of Bangladeshi currency.

⁴⁰ Participants who work in the garment factories requested that the research team protect their anonymity to avoid reprisal from factory management.

⁴¹ According to community Elders and Knowledge-holders, the Khyeng community women used to make decisions for self, children, family, production, cultivation, and so on. However, the decision-making capabilities of women have significantly changing recently (e.g., over the last 20 years).

traditional practices – in particular, women’s decision-making power and workplace freedom.

An Elder described a childhood memory, highlighting that the opportunities she had as a youth cannot be provided to their daughter:

I remember, when I was child we had lots of lands, and most of the land we did not need to cultivate. Even we did not need to work every day. We used to dance every evening after work. Our parents both used to work and take decisions together. They both used to go to the market and cook for everyone, together.

Co-researcher participant Hla Kray Prue Khyeng discussed the threats to this empowerment resulting from the Bangladeshi governments’ land and water management projects. A female garment worker explained how the government management projects seriously undermined traditional management practices and created food crises in her family and community.

Another co-researcher participant Mathui Ching Khyang said, “She does not see gender inequality in the community. However, since I cannot go to work and market like before, I feel alienated and cannot decide anything from home. Sometimes I get angry why I born this time.” She further said, “Since most of the families do not have enough cultivated land and/or cannot go to work, they are facing foods crisis last ten years.”

Losing traditional species diversity. Elders and knowledge holders explained that species extraction has had a serious negative impact on the community. Participants expressed that the current management projects – the Bangladesh *Forest Industries Development Corporation* (BFIDC) and *Government Reserve Forest* (RF) – appropriated *jhum* land from the forest, which resulted in high rates of species extraction. Participants asserted that the socio-ecological impacts of the projects include: increased labour inputs (e.g. weeding) in both *jhum* and plain-land cultivation; altered crop selection in both *jhum* and plain-land cultivation; interruption of optimal cycles of cultivation periods (Traditionally, *jhum* land is cultivated

every three years, the loss of land has necessitated a shorter cycle); and increased food crises in the community.

The pressure of government land and water management projects adversely affects the productivity of *jhum* and wild production. According to knowledge-holder Kosomo Prue Khyeng, the reduction of forestland due to RF and BFIDC encroachment has significantly impacted ecosystem diversity. The knowledge-holder explained that roughly 200-300 species of trees have been extracted. During a fieldwork component of the study, the⁴²research team also found a difference in heterogeneity among large plants are grown on natural hilly land and the profitable plantation land. Vegetation heterogeneity was 85% in hilly *jhum* land and only 3% in land used for cash-crop agriculture. We also found a difference in vegetation heterogeneity among the *jhum* territories. On the *jhum* lands near a government for-profit plantation, vegetation heterogeneity was 65%, as compared to the *jhum* lands one kilometer away from the government plantation, where vegetation heterogeneity was 95%. In addition, Elder Okko Prue Khyeng said that they experienced large numbers of weeds in *jhum* lands close to for-profit plantations. The Elder detailed the difference in productivity between traditional crops grown adjacent to for-profit plantations and those grown in locations far removed from the plantations: “we get an average of 30-40 *Hari*⁴³ rice in one hector of *jhum*

⁴² We (co-researcher participants) surveyed in two different random quadrants (1x1m) with a 50m radius around the point count station to conduct a detailed assessment of vegetation and habitat at the site. Each habitat was at least 100m apart from the other habitats. Global positioning system (GPS) location and elevation were counted for each point. Three features were measured at each habitat: shrub land area, total vegetation cover, and vegetation heterogeneity (percentage cover of three major aquatic vegetation life forms: land form elevation, slope, disturbance indicators, plant community). Vegetation heterogeneity was evaluated for each habitat using the Shannon-Wiener Diversity Index (Gray, 2000), using the percentage cover of each vegetation group as abundance data.

⁴³ One *Hari* contains 10 Kilograms

land which is nearby profitable forest, and we get 60-80 *Hari* rice from our deep forest which is one kilometer away from profitable forest.”

It is clear from participants’ discussion that the various agencies’ for-profit land and forest management projects introduced within the community are directly connected with the disempowerment of women and the expansion of species extraction from plain-land and forest resources. It was clear in the data provided by Elders and knowledge-holders that these processes are directly related to the poverty, food crisis, and unemployment endemic within the community.

Theme Three: Community’s Environmental Sustainability

The third theme that emerged from the data addresses participants’ understandings of sustainability: their hopes, dreams, and responsibilities for sustainability in relation to environmental management. This theme corresponds with the third research question: what are Laitu Khyeng hopes and expectations regarding land, water, and forest management policies and practices, particularly in relation to environmental sustainability? Data analysis suggested three emergent sub-themes in theme three that address this question: the community’s understandings of sustainability (i.e., the community’s views of sustainability and sustainability management); youth’s sense of sustainability; and community goals for sustainability.

Sub-theme one: Community’s views of sustainability in relation to environmental management. Indigenous people have a broad knowledge of how to live and sustainably management their environment (Baker, 2003). Toward defining environmental sustainability, community participants expressed that their understandings of sustainability involve collective actions, responsibilities, hopes, expectations, and inspirations, which are interconnected with

their traditional land and water management practices, identity, and life. In addition, participants grounded their perceptions in a number of interrelated practices: traditional cultivation; spiritual practices; ancestor stories; voicing community needs; and dreams, hopes, sounds, and smells. During the data gathering process, participants advanced recommendations to help alleviate problems, specifically advocating particular actions and interventions (both collective and individual). Through these issues, we discuss the community's perceptions on environmental sustainability.

When discussing the community's conception of sustainability, the first important issue to address is their *traditional cultivation culture*. Elder Kosomo Prue Khyeng stated that the purpose of sustainability was "to protect our traditional cultivation culture." According to the Elder, the community's traditional cultivation culture serves several roles: to protect nature, to encourage everyday relational and spiritual practices, to preserve ancestors' stories, and to fulfil everyday needs. Co-researcher Mathui Ching Khyang, after talking to the community's Elders and knowledge-holders, explained in her commonplace book why their traditional cultivation culture is an important foundation of environmental sustainability:

Our traditional cultivation is our relationships with mountain, the sun (i.e., it rises everyday in our Mother mountains' laps. It delights and inspires us-like an ongoing flame), land, culture, history, and traditions. Our traditional cultivation is not only for our people, but also for our relationships.

A second key element of the community's understanding of sustainability is their *everyday spiritual practices*. Spiritual practices are described in the data as linked to the protection natural resources and community members' lives. Elder Basa Khyeng explained, "the spiritual practices are our god(s) who are able to protect us." Particular spiritual practices are devoted to each of the various spirits; these include, the sun spirits, Mother-land spirits, forest spirits, water spirits, exchange spirits (traditional local market), and sacrifice spirits.

Knowledge-holder Thui Khyeng shared a folk song toward explaining the interrelationship of spirituality and sustainability (translated by coresearcher participants Mathui Ching Khyang):

Our Mother-land God: please bless us, protect us, and give us foods.
Our Sun God: we love you and keep us in your blessing.
Our Forest God: please give us strengths to protect you.
Our Animal God: please come back again.
Our Plant God: please keep us in your laps.

Participants emphasized the role of *ancestor stories* as learning tools, shaping knowledge and practice related to sustainability. For Elder Basa Khyeng, ancestors' stories are about the community's traditional cultivation practices on various lands: plain land, forest land, jungle land, and water land. Similarly, co-researcher participant Mathui Ching Khyang explained that the ancestors' stories are about "how our ancestors had survived and protected their life on our Mother-land." Her contention, therefore, was that protecting the ancestors' stories is a significant part of cultivating sustainability within the community.

The fifth and most common point discussed by participants emphasized that sustainability is an everyday *relational practice*. Knowledge-holder Kasamong Prue Khyeng likened the community's relationship with their environment to a vital part of the body: "like our heart as we have been dependant on our environment for centuries." Participant observation⁴⁴ revealed that every morning at an early hour members of the Khyeng community started their *jhum* work with a prayer honouring their relationality (e.g., with the sun god, the water god, and plants gods). The community believes that their daily relationship with the gods will help them to produce their foods, to protect their land, and to fight evil. Elder Shoi Khyeng shared her thoughts on why it is crucial to protect relationships with the community's nature gods. She said, "our relationality is to respect and honour to our nature gods such as: our river,

⁴⁴ Co-researcher participants.

tree, stone, sun, *jhum*, and moon. We feel our relationality in our heart. We believe our relationality can help us from any critical situations.” Building on this, the Elder emphasised that if they were not able to practice their relationality, they would not be able to survive and protect their forests.

Advocacy for the community’s needs is identified in the data as a sixth significant requisite for sustainability. Female activist Hla Kray Prue Khyeng explained: “The community’s needs are our sustainability,” adding, “if we are able to speak-up for our needs, we will be able to achieve our sustainability.” Hla Kray Prue Khyeng spoke to the community’s Elders, knowledge-holders, leaders, and youth participants during *jhum* and plain land cultivation and summarized in her commonplace book the community’s needs for preserving sustainability:

First, we need to continue our hard works to stop money lending national and international agencies’ business from our villages such as: microcredit [social business], NGOs, and tobacco private companies. For this we need research, local workshops for our Elders and knowledge holders regarding land grabbing strategies and tobacco’s negative effects. Secondly, I think, the Bangladeshi government can play a significant role for stopping tobacco companies like other parts of Bangladesh. Thirdly, we need to get back lost land for our survival and spiritual practices so that Indigenous people have opportunities to cultivate and produce foods. Last but not least, it is important to encourage our farmers to cultivate traditional plants in our land.

Dreams play an important role in understanding the community’s land and water sustainability and cultural practices. Elder Okko Khyeng explained that dreams are interconnected with their everyday spiritual practices. The Elder further clarified her sentiment stating: “dreams are our mountain, sun, relationships, culture, history, and traditions. Our dreams can be understood as our sustainability management.” Similarly, Elder Kosomo Prue Khyeng discussed that dreams and hopes are for both the human and non-human. Offering an example, he stated: “our dreams are not only limited to

human beings; dreams are for everything such as forest, animals, mountains, and so on.” In addition to encompassing the human and non-human, Elder Shoi Khyeng explained that “our dreams are for both every visible and non-visible member.” She elaborated that visible members include humans, animals, birds, crops, lands, insects, mountains, rocks, moon, sun, and water; the non-visible members include feelings, winds, smells, sounds, spirituality, and so on. Elder Basa Khyeng added, “everything has life and has the power to influence us and our interactions.” Thus, according to Elders, dreams associated with sustainability are dedicated to protecting all visible and non-visible family members.

The community’s *hopes* are explained in the data as directly corresponding with the community’s needs for sustainability management. For instance, Elder Basa Khyeng stated that their hopes concerning negotiation with the Bangladesh government are to “get back our lost land, forests, and mountains.” Knowledge-holder Ching Shao Khyeng expressed a desire to hold onto hope and not allow it to diminish: “We want to make hopes successful. We do not want to lose our hopes like a sunset.” The knowledge-holder expressed his wish for the Bangladeshi government to observe the community’s hopes and goals of sustainable management: “We are able to protect our land, water, animals, and forest by ourselves. We do not need outsiders [whose main intension is to make a profit].”

In the same way that the community’s hopes and dreams are grounded in spirituality, participants expressed that the community’s sounds also carry spiritual meanings, and are tied to sustainable management. Knowledge-holder Thui Jo Khyeng explained that the community’s traditional sounds vary from mountain to mountain, village to village, season to season, day to night, and so on. Elder Okko Khyeng added that he feels a responsibility to

protect their spiritual sounds and smells as part of realizing goals of sustainability. Co-researcher Nyojy U Khyeng illuminated that traditional sounds are interconnected with forest, plain land, and water, emphasizing the significance of sounds to the relational and spiritual connection with these elements:

We grew up with falls and mountain water sounds, these sounds mixed with our body and mind. By these sounds we can recognize our community's people and animals, even plants. We can find our community's roots with falls and mountain water sounds. Our sounds are relationships, our inspiration to live with our ancestors and our spirituality.

Co-researcher Hla Aung Prue Khyeng shared in his commonplace book that traditional sounds are impactful for sustainability management:

The Bangladeshi government's land-management policy makers do not see and/or cannot feel our traditional sounds. If we have opportunities to be educated in our culture and language, we will be able to teach our traditional management meanings of sounds to our future generations.

Elders and knowledge-holders expressed that the community's traditional relationship with sounds plays a spiritual role in sustainability management. Elder Basa Khyeng outlined that the Khyeng community uses various kinds of sounds to go "hunting, planting, and dancing to protect from evil spirits." Similarly, knowledge-holder Kasamong Prue Khyeng explained that "when the wind blows it makes a spiritual sound. Our plants, animals, and our heart are dancing with wind's sound. We are nothing but our relationships to avoid evil spirits."

Like sounds, the community knowledge-holders explained during both individual and sharing circle conversations that a spiritual connection to *smells* is also vital to land, water, and forest sustainability management. Participants express that smell is regarded by the community as a source of inspiration. They further clarified that smells such as wild and domestic animals, crops, *jhum* land, plants, and people have distinct meanings in their community. Since particular smells serve as a determining factor influencing the planting and harvest of various

kinds of crops in *jhum* and plain land cultivation, sustainable management practices rely greatly on traditional ties to smells.

In sum, according to participating Elders, knowledge-holders, co-researchers, and leaders, understandings of sustainability within the community are grounded in traditional cultivation culture, spirituality, responsibility, relationality, and talking about community needs. The data also illuminated how the traditional significance of dreams, hopes, smells, and sounds are connected to sustainability and sustainability management. Participants expressed that the above sustainability attributes are not viewed in a hierarchal manner, but are mutually dependent. Participant views and understandings represent a strong desire to protect the community's traditional cultivation culture, animals, *jhum*, plants, land, and water.

Sub-theme two: Youth's sense of sustainability. The second sub-theme in theme three endeavours to illuminate why and how community youth wish to protect traditional land and water management practices in order to achieve environmental sustainability. An interesting development within the participatory research process was that as the youth became more comfortable with one another and with the process, they began asking follow-up questions to each other's responses. According to youth and co-researcher participants, youth understandings of sustainability have similarities with those of Elders, knowledge-holders, and leaders; however, they believe their views of sustainability carry a number of particular responsibilities. Actions and responsibilities identified in the data include: organizing peaceful movements; disseminating negative consequences to mainstream national and international (e.g., UN and other donor agencies) communities; critiquing state anti-community educational curricula; learning traditional cultivation; promoting traditional music, dance, and songs; preserving and promoting Khyeng language; and protecting customary practices. Such actions

and responsibilities are elaborated below through drawing on data from participants' conversations.

To foster the community's sustainability, the youth's first responsibility is to *organize peaceful movements* aimed at preventing government and non-government land-management projects – Brickfields, profitable plantations (lumber), and tobacco plantations – from being developed in the community. As part of the youth action mandate, female leader Mathui Ching Khyang asked “is there anyone in our government who can hear our cries for our Mother-Land? Who can feel our pain for Mother forest, mountains, water, and traditional cultivation?” The Khyeng student president, Hla Prue Khyeng, explained that if youth advocates are not able to stop the management projects, they may lose the opportunity to preserve their Indigenous identity, traditional cultivation culture, language, and spirituality. Through this action, youth wishes to reach out to government and other agencies in order to make heard their appeal on behalf of the Mother-Land and the community's needs.

A second imperative recognized by the youth is to broadcast the *negative consequences* of the government and private agencies' land-management projects to the mainstream population. Co-researcher participant Hla Aung Prue Khyeng asserted: “we need to inform all Bengalis that through the artificial management projects, our Mother land, environmental diversity, and our spirituality have been stolen from us, as is our land;” and further that, “we believe, if we are able to show correct information to the mainstream communities, our Mother land and nature will be protected.” Finally, the youth participant specified, “We need to build awareness [nationwide] through the media and news for stopping the brick-field, the tobacco plantation, and the profit oriented plantations from our community.”

A third responsibility expressed by youth toward promoting traditional sustainability is to correct the state's insufficient *educational curriculum*, which provides inaccurate information about Bangladeshi Indigenous communities culture, natural resource management, cultivation, foods, and identity. Co-researcher participant Nyojy U Khyang illuminated that state educational curricula provide false and derogatory information about Indigenous communities, suggesting that, "we [Indigenous people] are uncivilized and our traditional culture, cultivations, and spiritual practices are anti-development, and so on." Aligned with Elders and knowledge-holders, the youth community does not dispute that all children should participate in mainstream institutional education; however, they want the government's educational curricula to change and provide accurate information about their traditional management knowledge. Laitu Indigenous schoolteacher Mongla Prue Khyeng expressed that, although changing the state curriculum is a challenge, he is not deterred in his efforts. In addition to such advocacy, Mongla Prue Khyeng spoke to his involvement in an initiative to share traditional stories and knowledge to community children at home. Laitu Indigenous school teacher Nyojy U Khyang similarly emphasized efforts to amend state curricula: "the Khyeng and other Indigenous primary and high school teachers requested to the district to change Indigenous communities school's curriculum." Participants highlighted in the data that they want cooperation from the Bangladeshi government to add traditional knowledge to their current education curriculum. Nyojy U Khyang stated: "we want to learn our traditional knowledge first as we believe our traditional knowledge can help us to build relationships with our forest and spirituality." Participants aspire to keep alive their traditional stories, not only because they are a part of traditional heritage, but also because the stories are essential to cultivating the community's sustainability.

A fourth responsibility discussed by youth participants is to *learn traditional cultivation systems* (see Figure 8). Co-Researcher participant Nyojy U Khyang shared the following in his commonplace book: “We youth hopes to learn our cultivation processes from our Elders. We know our cultivation system can save our land, water, animals, birds, and our ecosystem ... We do not have enough money, but we do have Elders and knowledge-holders who can teach us how to protect ourselves and our environment.” Youth participant Hla Aung Prue Khyeng stated in agreement: “Our cultivation knowledge is our sense of education.” Elder Shoi Khyeng reinforced the youth’s desire to prioritize traditional knowledge stating, “We need to tell our traditional stories to our children so that our children are able to get educated and protected our Mother-nature.”



*Figure 8. Traditional Jhum and Plain Land Cultivation. This figure’s photos are from coresearcher participant Hla Aung Pure Khyeng’s photos. The left picture shows *jhum* cultivation, and right photo shows plain-land cultivation.*

The fifth responsibility highlighted by youth in the data involves the *promotion of community music, dance, and stories*. Many of the youth participants expressed that the music, dance, and stories are important to building sustainability, as they comprised a significant component of the community's management knowledge system. Youth participant Usa Khyeng

illuminated that music and dance were avenues of spiritual connection, and that he needed to protect them for himself and the community. To illustrate his sentiment, the participant shared a folk song describing the community's relationships with plants, birds, animals, and so on. The song, which was written by knowledge-holder Kasamong Prue Khyeng and translated by co-researcher participant Mathui Ching Khyang, is included below:

My younger beautiful sister plants
Do you hear? Your friends (birds) are singing for you.
Do you hear? Your friends (deer) are singing for you.
Do you hear? Our paddy crop is dancing with the wind for you.
Do you see? I am making rice pitas for you.
O my adorable sister.

A sixth responsibility discussed in the data emphasizes the *preservation and promotion of the Khyeng language*. The youth participants discussed that they have been actively lobbying to integrate their language into the education system. Youth participant Hla Aung Prue Khyeng expressed a hope that the Bangladeshi government will recognize the Khyeng language and “provide an opportunity to study until grade five in our language.” Likewise, youth participant Nyojy U Khyang believes that revitalizing the Khyeng language will help community members to better understand their cultural cultivation system and more successfully protect their environment. Youth participant Usa Khyeng similarly expressed that preserving the community’s language is connected to nurturing the community’s sustainable lifestyle. The youth participant stated: “If we get own language education, we are confident enough that we will be able to refuse all the unexpected management projects from our Motherland.” Through highlighting the importance of the community’s language, co-researcher participant Hla Aung Prue Khyeng indicated that proponents are already working with Khyeng Elders and knowledge-holders to develop Khyeng writing scripts.

The seventh responsibility addressed by youth participants emphasized a need to *protect traditional customary practices*. Co-researcher participant Nyojy U Khyang explained in his commonplace book why the community's customary practices are important for their land and water sustainability management; he wrote: "Our traditional customary land and water management practices are our relationships, our practices are to us as sharing processes with each-other and do not make our people as others." He went on to add: "We dance, sing, and solve the land problem according to our customary practices." Youth participant Usa Khyeng expressed a similar sentiment:

Our customary land and water practices are different from the Bangladeshi government's and non-government's land-management projects; thus, the administration does not show interest to understand our traditional customary land and water management system. Our customary land and water practices are vital for our identity and sustainability.

An eighth responsibility emerging in the data is a commitment to *learning traditional clothes-making techniques*, associated with the community's traditional sustainability practices (see Figure 9). Co-researcher participant Hla Kray Prue Khyeng emphasized the connection between traditional clothes-making practice and cultural identity: "our identity and culture are interconnected with our traditional clothes-making tradition." However, she added that governmental and non-governmental land and water management projects contribute to the loss of the Khyeng community's traditional clothes-making education.



Figure 9. Traditional Clothes-Making. This figure's photos are from co-researcher participant Nyojy U Khyang's photovoice. Both of these pictures show how Indigenous Elders teach youth traditional clothes-making techniques.

Similarly highlighting the importance of traditional clothes-making knowledge for the community's sustainability youth participant Usa Khyeng offered: "Our traditional clothes-making not only tells lots of our relational stories but also it connects us with our ancestors' sustainability memories [i.e., self-sufficiency]."

In sum, the data revealed that the youth community was active and hopeful, driven by a dream of achieving sustainability goals through fulfilling a series of key responsibilities. The community youth believes that it is critical moment to reclaim their voice and rights; and that, if they cannot, the youth and future generations will soon lose their identity and sustainable livelihood.

Sub-theme three: Community goals for sustainability. The research team noticed that a number of goals expressed by participants overlapped with data reported under previous themes. We agreed, however, that it is worthwhile to present the goals of Elders, knowledge-holders, and leaders under a separate heading in order to focus on participants' hopes, responsibilities, and awareness. Goals expressed by Elders, knowledge-holders, and leaders

include: the recognition of Indigenous identity by the state constitution; mainstream awareness of traditional land, water, and environmental management practices; an immediate halt to for-profit projects that exploit the community's cultivated and forest land; the reacquisition of lost forest, plain land, and cultivated land rights; the inclusion of Indigenous language in schools and educational institutions; the promotion of tobacco alternatives; the inclusion of the community in land and water management decision making processes; and inclusion in governmental and non-governmental development projects and research. Elaborating on the goals listed above, community understandings are discussed regarding how to preserve and enhance the community's sustainability.

The first goal discussed by participants is to enforce the protection of forest *species diversity*. Community Elders, knowledge-holders, leaders, and youth participants stated that protecting forest species diversity is interconnected with the community's spirituality, culture, history, and tradition. Elder Okko Khyeng emphasized that the natural forest diversity is indivisible from culture, identity, stories, and traditions. Co-researcher participant Mathui Ching Khyang explained that it is the community's hope "to get back our traditional species that have been removed by different projects." She shared the following appeal, intended for the Bangladeshi government and development agencies: "please help us to rebuild our natural forest. We need your help to stop uneven projects from our land and get back our forest land. We (community people, forestland, plain land, animals, and plants) are like a family. Please give us our land back."

As emphasized by knowledge-holder Thui Jo Khyeng, a second significant goal is to *eliminate poverty*. Elder Okko Khyeng explained: "It is very essential to get back our rights to practice our traditional customary land and water management practices on our land to

eliminate poverty from the community, and to build a sustainable livelihood.” According to the Elder, it is necessary for these rights to be codified within the constitution so that such rights may be invoked and enforced through established legal and judicial procedures. Elder Okko Khyeng connected the shift in state projects with the revitalization of traditional cultivation and the subsequent elimination of poverty within the community:

Our customary land and water spiritual practices were weakened by the Bangladeshi government and non-government agencies. As a result of this, we have serious poverty in our community. Through our customary land and water spiritual practices, our traditional self-sufficient economy can be established.

*Enforcement of the Chittagong Hill Tracts Peace Accord*⁴⁵ is a third main goal toward promoting the community’s sustainability. Elders, knowledge-holders, and leaders expect the Bangladeshi government, development agencies, researchers, educators, and mainstream people alike to take action to ensure the recognition of land-rights established by the CHT Peace Accord. For example, Elder and leader Basa Khyeng explained why it is important that the Peace Accord succeeds in enshrining land rights for the Laitu Khyeng community:

We, as Indigenous peoples, have been protesting against the Bangladeshi government and non-government agencies’ artificial land-management projects in our land for decades, but they didn’t listen to us. Now, we need to protect our forest resources, plain land, and waters so that our children and grandchildren will have the ability to live. We need help from the global communities to protect our life and our land. It is high time for all of us [Indigenous and non-Indigenous Bangladeshi] to come together and build a sustainable future. The CHT Peace Accord succession of land rights can stand on behalf of us. Today, we ask you to stand beside us and take actions for Peace Accord succession.

Together, youth, Elders, leaders, and knowledge-holders expressed that a fourth goal toward promoting sustainability is pressuring the Bangladeshi government to *immediately stop*

⁴⁵The Chittagong Hill Tracts Peace Accord is a political agreement and peace treaty between the Bangladeshi Government and the *Parbatya Chattagram Jana Sanhati Samiti* (United People’s Party of the Chittagong Hill Tracts), the political organization that controlled the *Shanti Bahini* (CHT Indigenous Political Party). The accord allowed for the recognition of the people and Indigenous of the CHT region and ended the decades-long insurgency between the *Shanti Bahini* and Government forces (Adnan, 2004; Mohsin, 2000).

anti-community development projects in the community: brick-field, tobacco plantations, and profit oriented lumber plantations. Participants stated in the second sharing circle that the different agencies' development/management projects relating to the community's Mother-land are dangerous. Elder Kosomo Prue Khyeng expressed during the individual story sharing process why the Bangladeshi government needs to stop for-profit projects on the community's cultivated and forest land immediately:

Our foods productions and our children are at risks for different agencies' killing projects in our community. If the government does not stop these dangerous 'development' projects from our land, we will not able to protect ourselves, our future generation, and our environment.

It is clear from the data that the community's Elders, leaders, and knowledge-holders believe it is essential to stop projects imposed by government and non-government agencies, and begin to reverse the negative consequences experienced by the community.

The fifth goal articulated by participants is to *reclaim traditional forest and plain cultivated land*, which according to Elder Kosomo Prue Khyeng: "have forcefully taken from our community." Knowledge-holder Kasamong Prue Khyeng indicated that the three Laitu Khyeng Indigenous villages are the largest villages in Bandarban district, and added that "80% forest and plain cultivated land have grabbed by the Bangladeshi state government Reserve Forest (RF) and the private agencies' profitable projects." He went on to explain the need to get back lost lands:

Every Khyeng family had 40-50 acres of land, which used to sufficient for most of the family members food consumption. Most of the time we had a surplus of foods that we used to use during the next year. We were satisfied with our land, and we did not have a food crisis in our villages. However, since our lands and forest resources were stolen and/or grabbed by the government and the private companies' profitable projects, we have been facing serious food crisis in our community. Getting back our land from the state can solve our food crisis and poverty.

Similarly, knowledge-holder Shangla Prue Khyeng explained how they aspire to rebuild their sustainability through the reclamation of stolen land. He said:

We want our land back. If we have our land back, we will be able to produce our food and create our own sustainability. Our land is our sustainability. I would like to ask our government to please give our Mother land back to us and save us, and help us to protect our forest-diversity.

The sixth goal illuminated in the data is an effort to persuade the Bangladeshi government to recognize the community's customary practices as a key feature of their children's education. Schoolteacher Ching Cho Khyeng explained that traditional cultivation culture needs to be institutionally recognized to ensure self-dependency and sustainability. He stated:

Since the state's institutional education systems teach the incorrect information to our Khyeng Indigenous children and youths. This kind of education forces us how to forget our culture so that we can be so called *civilized*. I see this *civilized* as a dependency.

Community Elders and knowledge-holders agreed that children should have the opportunity to learn traditional cultivation practices at a minimum until the fifth grade. Another Khyeng schoolteacher, Ching Shao Khyeng, explained sadly: "I wish we would have opportunities to tell our stories to others Indigenous and non-Indigenous communities. I think our education system can enrich us, and can create opportunities to relate our stories to others."

The community's seventh key goal emphasized by participants is to determine and cultivate alternative crops to tobacco. Knowledge-holder Kasa Mong Khyeng said: "We hope our government and development agencies will help us to promote tobacco alternatives from our community's villages." According to Elder Kosomo Prue Khyeng, the tobacco project has expanded within the last two decades. The Elder lamented: "Although we wanted to get out

from this dangerous project's cultivation, most of us are stuck with private companies' money lending loop." Youth leader Hla Kray Prue Khayang reflected on the prospect of developing alternatives to tobacco plantations within the community. She explained that the Bangladeshi government and development agencies could play a significant role in promoting beneficial initiatives. Her expectations, articulated in her commonplace book, are as follows:

First, we need to work regarding how to stop money lending by tobacco private companies among our Indigenous peoples. For this, we need seminars and workshops to build consciousness. Secondly, the village farmers should ask individually how much land they need for cultivating foods to survive. The Bangladeshi government and/or other development agencies, such as UNDP, UNSCO, and so on, should give financial incentives to our farmers for the first two years. These incentives I propose can be divided into three stages such as: first time during preparing land, the second time during planting seeds, and the third time is during plant growing. Third, the borrowing money can be paid back within two or three years after getting harvest production so that the farmer has kept harvest production for the family, and surplus foods they can be used to pay back the loan. Finally, the important idea is to produce ginger and turmeric in our *jhum* as these have economic values on the market, and these products do not have negative impacts on *jhum* and plain lands.

Hla Kray Prue Khayang proposed the above initiatives in order "to reduce poverty in her community."

The eighth goal outlined in the data promotes increased *involvement with government and development agencies' land and water management decision-making processes*. According to Elder Kosomo Priu Khyeng, the community endeavours to be part of management decision-making processes because without community engagement "the Bangladeshi government and non-government's land-management projects became more exploitive than the British colonial government and the post-colonial Pakistani government." He also expressed the following grievance with various governing structures: "neither the British colonial government [1757 - 1947] nor post-colonial governments [The Pakistan 1948-1971, and the Bangladesh 1972-current] have included us in our forest resource management or government reserve forest

projects.” Since Khyeng is one of the smallest Indigenous communities in CHT, Khyeng Elder Thui Jo Khyeng argued that they were more completely excluded from land management decision-making processes than larger of Indigenous communities. He stated sadly, “We got several management projects in our village; however, all of these projects were our land grabbing projects, they [different agencies] did not count our voice at all.” This led Elders to state: “the Bangladesh government and others first should include our Elders and knowledge-holders in our land and/or forest policies decision-making processes for our natural resource management.”

It is clear from the data that the community has suffered land loss and poverty due to the Bangladeshi government, private company, NGO and development agency for-profit management projects. However, community members are not without hope. The community members have been fighting to stop different agencies’ damaging projects and to protect Mother Nature. For example, Elder Basa Khyeng said, “We observed that the community is not only dreaming and hoping, but also working hard to rebuild their traditional forest-water management.” Participants expressed that the community not only has the ability to build a self-sufficient economy and protect local ecosystems, they are also able to contribute to the Bangladesh economy and create new forms of sustainable practice.

Through our conversations, the research team also learned that the Laitu Khyeng in CHT possess a robust sustainable management culture, and can serve as a sustainable community. Even in tough times, they have worked to retain and regain the strengths and gifts to help build their communities. The community does not subscribe to the illusion that government will solve all of their challenges; rather, they recognize the importance of strengthening their own capacity as individuals and as a community. However, there are times

when they need government, institutions, and multinational agencies to response in meaningful ways to their sustainability needs.

Conclusion

The findings of this chapter have suggested that although the community's meanings of land, management, and sustainability were taken up in the forms of knowledge and practice embedded in the local culture of Laitu Khyeng Indigenous community, the current government land-management projects were imperatively different from the community's sense of environmental resource management practices. Regarding community's natural resource management there was a power disparity between the State and traditional Indigenous administrators.

In considering land-water management and environmental sustainability in relation to the knowledge and practice of Laitu Khyeng community, the findings of this study have revealed that participating Elders and knowledgeholders describe their perspectives of traditional land-water and management in terms of traditional cultivation knowledge and practice, including knowledge of forest and, plain land, soil fertility practices, animal and water protection, and spirituality protection of the environment. On the other hand, the community sees the outsiders current management projects were as a source of unsustainability including soil degradation, deforestation, land grabbing, land alienation, water crisis, illegal settlement, displacement, disempowerment, and poverty. However, the collective (particularly youths) responsibilities and goals for sustainability are largely rooted in their social-cultural interactions within their community.

In addition, the findings show that participants in the study acknowledge that their community is facing many problems, but they are not treating the situation in a hopeless or

pathologizing manner. Instead, they have been trying to protect their land, water, and forest. To achieve environmental sustainability in the community, participants recommended all youth in the community learn local traditional cultivation and practices for protecting the environment. In addition, it was suggested that the community should engage in both collective and individual actions.

The findings have also unveiled inconsistencies between: management projects and practice, lack of communication between Bangladesh government and non-governmental development projects and the Laitu Khyeng Indigenous land-management practices. Indeed, we learned that the community's traditional land-water management practices were an essential part for community's sustainable livelihood. The next and final chapter discusses the findings further through relating back to the literature reviewed throughout the dissertation as well as considering implications for policy, practice, and future research. Also included in the last chapter are my personal reflections on the process of conducting the study.

CHAPTER FIVE: DISCUSSION AND CONCLUSION

This chapter further discusses the research findings by focusing on the main issues that emerged from the three themes presented in the previous chapter, and relating back to the literature reviewed throughout the dissertation. The discussion is centred on four main topics in relation to the Laitu Khyeng Indigenous community's natural resource management and sustainability: the meaning of land and water, the understanding and practices of management, the impact of colonialism, and the community's imagined goals in pursuit of sustainability. Following the discussion of findings, I include a commentary on implications of the research for policy, practice, suggestions for future research, and limitations of this study. I end with personal reflections on the process of conducting this collective study.

Community Meanings of Land, Water, and Management Practices

As outlined in the literature review chapter, the study acknowledges the importance of the community's traditional understandings and practices of land, water, and management practices (Berkes, 2003; Deyhle, 2009; Mukherjee, 2010; Nadasy, 2011; Tuck & McKenzie, 2015). The study's findings revealed that participants value relationality, hybridity, otherness, and scientific knowledge in explaining the community's perceptions on land, water, and management.

Community meanings of land and water. The first key consideration of this research that the research team and the participating community members wanted to highlight is how land and water are traditionally understood. The Laitu Khyeng community's understandings and practices draw on long and vital trajectories of Indigenous theory and daily practice that understand land and water as hybrid (Whatmore, 2002, 2006) and relational practices (Mayer, 2001; Wilson, 2007, 2008). In this section, we (research team) discuss these considerations of

land and water as they are linked to Indigenous sustainability management practices and Indigenous relational ontology.

Hybrid practices. The concept of hybridity has been one of the most powerful means of re-examining and reconfiguration everyday practices in a way that values diversity and honours interconnectedness among multiple actors (Ashcroft, Griffiths, & Tiffin, 1998; Whatmore, 2002, 2006). In postcolonial literature, hybridity has been given varied meanings, and has been applied in a variety of ways (Forsyth, 1996). In order to explore everyday practices, Kraidy (2002) emphasizes the concept of hybridization. Kraidy (2002, 1999) outlined that at the level of the everyday, we are confronted with a network of complex relationships, dynamic and process-based practices that constitute hybrid realities. Thus, meanings and practices of land and water as hybrid realities emphasize a plurality that recognises diversity, interconnectivity, identity, and strengths (Dove, 2006; Amoamo & Thompson, 2010).

From a foundation of hybridity, we cannot create a separation between human and nonhuman actors (Latour, 2004). Bhabha's (2004) writing on hybridity has been important for articulating Laitu Khyeng land and water understandings and practices, as his conceptualization makes it clear that the community's land and water must be understood as complex integrations of multiple meanings, historical temporalities, and positions. Other writers are equally insistent on this; for example, Pieteme (2004, p. 82) wrote that "hybridity is as fluid, the mixing of culture, rather than their separateness is emphasized." In our research findings, the community's perspectives on hybridity also offer empowerment through acknowledging the correlation between traditional knowledge and everyday practices as an integral part of their Indigenous identity. For example, as presented in Chapter four (Theme One), Elder Kosomo Prue Khyeng identified that land and water have multiple interconnected

meanings to the community, such as parents, friends, and god(s). Likewise, knowledge-holder Kasamong Prue Khyeng discussed the multiple meanings of land and water through describing four kinds of spirits, all having different but interrelated purposes (see Figure 2).

In the Laitu Khyeng context, hybrid understandings of land and water are significant for the community's land rights and identity. Such a correlation seeks to advance the discussion of Bhabha's concept of hybridity as a means of understanding the transformative and dynamic interplay of cultural land practice. For example, as Elder Kosomo Prue Khyeng explained, "For us, both land and water are our parents, culture, and our identity."

To the Laitu Khyeng Indigenous community, hybrid meanings of land and water are connected to their strength (Bhabha, 1994, 1996). Consequently, notions of hybridity are conveyed discursively through community operations in order to establish this strength. For example, knowledge-holder Ching Cho Khyeng characterized traditional land and water practices as sustainable management practice." The knowledge-holder further stated: "our natural crisis [which is not imposed] is also our strength as our crisis also teaches us how to face challenging situations."

Thus, we can see that to the Laitu Khyeng community, hybrid notions of land and water are complex and diverse. Ideas of hybridity presented by Bhabha (1994), Latour (2004), and Whatmore (2006) illuminate multiple complexities involved in community land and water practices, decentering colonial orientations that privilege fixity and rigidity. Laitu Khyeng notions of land and water hybridity offer the opportunity to rethink how to move beyond fixed, dominate perspectives that are entrenched in a colonial Eurocentric framework. Thus, hybrid meanings illuminate Laitu Khyeng land and water understandings and practices within the possibilities of diversity, interconnectivity, identity, and strength.

Relational practices. In addition to hybrid meanings of land and water, study participants also wanted to highlight the theme of relationality. Relationality is significant for the community's identity and other rights. The role of relationality in understanding the meanings of land and water can be explained symbolically in that it centres around Indigenous rights and their lives (Escobar, 2008; Wilson, 2008). In this study, participants' relational understandings and practices of land and water use have strong theoretical implications: namely, relationships with the community are alive and have agency; and relationality centres around Indigenous voices and needs.

Indigenous scholar Simpson (2001) suggested that in the Indigenous worldview, everything is alive, sacred, and relational. He theorized that human, nonhuman, and spiritual relationships were indispensable to Indigenous worldviews. Analysis of the data showed that to the study participants, similarly, all human and nonhuman relationships are alive and have agency. For instance, participants discussed that relationships represent the foundation of help, support, and respect of spirituality, environment, natural law, and traditional cultivation culture. With such a connection, Koukkanen (2000) emphasised the relational agency of respect and honour within Indigenous worldviews. He explained that Indigenous respect for land and water is grounded in understanding and honouring relationships, which empowers a consideration that everything is equal, albeit different and interdependent. In a similar manner, Greenwood (2009) suggested that relationships are powerful, significant, and complex: relationships are all about "deconstructing and reconstructing identities" (p. 277). In the data, participants explained that land and water constitute a relational space for the community. For example, co-researcher participant Mathui Ching Khyeng wrote the following in her commonplace book: "our

relationships with our land and water are like our parents, who can take care our everyday needs, teaches us, protects us, and guides us.”

Indigenous people position relational practices of land and water as central in order to communicate their culture, spirituality, production, consumption, and economy (Escobar, 2008; 2013; Meyer, 2001). Other Indigenous scholars – Kovach (2005, 2009) and Wilson (2008) – similarly position relationality as central to explaining Indigenous worldviews. According to Kovach, Indigenous ways of knowing and acting are dependent on relationality. Laitu Khyeng Elder Okko Khyeng expressed that relationality helps the community to be responsible not only for their lives, but also for everything in their environment. Reinforcing the point, knowledge-holder Ching Cho Khyeng stated: “our relationality helps us to respect and honour our land and water gods. We believe our relationality guides us and inspires us to speak-up for our land and water rights.” He further explained: “our relationships with our land and water not only speak for ourselves, but also for our animals, species, plants, and so on. Thus, our relationships with our land and water can be seen as our needs. Indeed, we are here for our relationships.”

In summation, Indigenous hybrid and relational understandings of land and water are vital to building trajectories of Indigenous resistance (Alman, 2009; Amoamo & Thompson, 2000; Helene & Delean, 2006; Tuck & McKenzie, 2015). Like Escobar (2008), we as researchers identified three reasons why hybrid and relational practices of land and water are needed for Indigenous identity, culture, justice, and sustainable living: first, traditional land and water knowledge generally connects with body, environment, culture, and economy in all of their diversity; second, land and water practices are continuous sources of culture and identity, which decolonise social life; and third, Indigenous land and water understandings and practices can restore traditional practice, and reconstitute today’s cultural, economic, and ecological

policies. Thus, like Smith (1999) in New Zealand, Wilson (2008) in Australia, Meyer (2008) in Hawaii, and Kovach (2009) in Canada, participants emphasised hybridity and relational understandings and practices of land and water in order to communicate and empower their traditional land and water practices. Aligned with trajectories of land-rights movements, this study prioritizes Laitu Khyeng Indigenous community's understanding and practices of land and water, their land and water rights movements, and their Indigenous identity.

Community meanings of management. A second key consideration of this research highlighted by participants is how Indigenous management is understood and practiced in the community. As we previously discussed in the findings chapter (theme two), in western academic discourse, the management concept is used in different ways than within an Indigenous worldview (Berkes, 2003, 2009; Nadasy, 2003). This difference may be illuminated along the following lines: the western sense of environmental management has been widely criticised as positing humans (particularly western men) as a superior life form with an inherent right to use and control nature toward individualistic ends (Escobar, 2008; Vos, 2007). Indigenous worldviews, in contrast, see all management entities in a relational context, and stresses interdependency and justice for all life forms (Lauer & Aswani, 2009). In our study, researchers and participants together identified the Laitu Khyeng community's concept of management in terms of agency, relationality, commonality, and science.

Management as an agency. Like other Indigenous understandings of land and water, Laitu Khyeng environmental resource management practices adhere to particular forms of agency: embracing diversity, sharing power, and trust building as part of everyday management practices (Amoamo & Thompson, 2010; Berkes, 2009).

To the Laitu Khyeng Indigenous community, management practice honours the diversity of everyday life, which includes modes of spheres, domestic animals, cultivation tools, types of paddy crops, and forest resources. Such diverse aspects of management represent various agencies in their management practices and each has its own management power. According to participants, each component has an influence on the community's production, consumption, needs, time, surplus, and distribution. Elder Kosomo Prue Khyeng expressed in the data that "each animal, plant, and species has owned management power." He also clarified that community members do not believe management is a power that can be used over another; rather, management is comprised of different kinds of living relationships, which have the ability to influence management practices. Similar studies have argued (e.g., Berker, 2003; Simpson, 2001) that ideas of management practiced within Indigenous communities have diverse meanings and agency.

A second management dimension foundational to the Laitu Khyeng Indigenous community involves sharing power through traditional administrative processes. An example of this power-sharing practice, the community makes resource management decisions through participatory dialogue among community members. Berkes (2009) discusses power sharing in Indigenous management as a complex process (see also, Nadasy, 2003). Power sharing can be seen as a move toward equity, as in the case of land distribution processes among Indigenous communities in Canada, Australia, Norway, and elsewhere. In the study, we observed that traditional management is enacted through power sharing overseen by traditional administrative structures. In this traditional administrative process, everybody owns rights on production and distribution. This aligns with the suggestion of Borrini-Feyerabend et al. (2004) that "participatory traditional management needs participatory roots" (p. 175).

Traditional management is discussed in the data as a process of trust-building amongst the community. The sharing of traditional knowledge and stories by Elders and knowledge-holders (i. e., planting, cultivating, fishing, clothing, and spiritual celebrations) is considered a trust-building process in the community (Adnan, 2004). We (co-researcher participants) noted that youth participating in Elders' evening story-sharing circles explained that they experienced trust building and gained valuable knowledge, such as how to recognise particular plant and animal behaviours and purposes, how to build relationships with these plants and animals, and how to take care of traditional animals and plants.

Christopher, et al., (2006), Davidson-Hunt (2007), and Michon et al., (2007) consider trust in natural resource management as a form of social capital. Trust appears to be a determinant of success across generations in a diversity of management processes: a requisite to building and sharing knowledge and fostering effective relationships (Berkes, 2009). For example, Elder Basa Khyeng stated: "our land, water, forest, animals are our parents. They take care us, and our responsibilities are to take care them. Therefore, we cannot sell them or use them for profit." In addition to a sentiment of responsibility, participants emphasized that the community's management practices have multiple benefits: a) nothing can be owned as individual commodity, and everything belongs to everyone; b) they build relational trust with each other; and, c) they construct supportive, respectful, and honourable attitudes among community members. The trust building processes in environmental resources management allow us to recognise *others* as ourselves (Escobar, 2008; Johnson & Murton, 2007; Latour, 2004; Martusewicz, 2009; Said, 1994). In such trust building arrangements, everything is considered to belong to the community (Adnan, 2004; Escobar, 2008). As Martusewicz (2009)

suggested, common practices are helpful “at protecting larger life systems we need and thus we are actively engaging and protecting collaborative intelligence” (p. 258).

Management as a scientific practice. The Laitu Khyeng Indigenous community views their spiritual and relational management practices with the environment as having scientific and ecological significance. The researchers identified examples from participants’ discussion, photovoice, and commonplace books in which Laitu Khyeng Indigenous management practices offered solutions to multiple ecological and sociological issues. We discovered that traditional spiritual and relational management can reduce species extraction, water crises, logging, weeds, and food crises; and that traditional management knowledge increases plant and animal species diversity, women decision-making power, youth empowerment, organic fertilizers, crop selection, and surplus distribution. Participants also expressed that hybrid, common, and scientific meanings of management practices are essential for reconstructing the Laitu Khyeng Indigenous identity, culture, and sustainable livelihood. Such a narrative can offer the opportunity to reconstruct, communicate, and reclaim Laitu Khyeng Indigenous traditional practices of natural resource management. Berkes (1999), Berkes and Henley (1997), and Berkes and Folke (1998) similarly discussed Indigenous traditional management practices as scientific knowledge. The authors explained that Indigenous traditional knowledge promotes the protection of remaining components of biodiversity and the unique values of local cultures; in addition, it can enhance the ability of local communities to establish a livelihood. In other words, Indigenous traditional management understandings and practices are considered successful for natural resource management with respect to social, political, economic, and ecological domains (Datta, et al., 2014; Wallerstein & Duran, 2007; Walker & Le 2008).

Berkes and Herley (1997) also suggested that in seeking practical solutions to environmental and socio-economic impacts, local Indigenous management knowledge is a vital resource.

Impacts of Colonialism

In addition to the Laitu Khyeng Indigenous community's diverse and relational understandings and practices of land and water and management, another main issue revealed in the findings involves the impacts of contemporary agencies' (both government and nongovernmental) colonial natural resource management policies. As outlined in chapter two, the CHT were colonised by Britain (1757–1947), Pakistan (1947–1971), and Bangladesh (1971–present). Although Bangladesh achieved independence from Britain (1947) and Pakistan (1971), the impacts of colonialism on the CHT and the Laitu Khyeng Indigenous community persist. The study's findings revealed three major impacts that can be attributed to the effects of colonialism: the privileging of non-Indigenous natural resource management knowledge over Indigenous knowledge, the state's administrative structure over Indigenous structure, and outsider profit-oriented development projects over Indigenous land and forests.

The consequence of valuing non-Indigenous knowledge over Indigenous knowledge was discussed as a significant colonial impact on the Laitu Khyeng Indigenous community's traditional natural management practices. Participants argued that Indigenous understandings and practices were significantly undermined by outsiders' (governmental and nongovernmental) land policies and projects. For example, Elder Basa Khyeng stated that the different governmental and nongovernmental agencies' management practices were characterized as indisputably profit-driven, detached, and certain of their method. Adnan (2004) draws similar conclusions, stating that in the CHT, the Laitu Khyeng Indigenous people were “clearly exploited and dominated by Bengali [non-Indigenous people] while also being

neglected government and agencies of the state” (p. 72). Indigenous scholars Tuck (2012) from North America and Chakma (2010) from South Asia showed how a settler colonial framework privileges settler knowledge over Indigenous knowledge. Other researchers have argued (Berkes, 2001, 2009; Escobar, 2008, 2013; Roy, 2001) that outsider management practices in Indigenous land can be a significant barrier to Indigenous sustainable practice: due to both the consideration of land as profitable, static, and exploitable; and processes of disembodiment of social life from local connections.

Non-Indigenous environmental management knowledge can lead to dangerous consequences for the local environment. For example, participant Elders, knowledge-holders, and leaders expressed that the modern management policies have not only eroded Indigenous traditional environmental management knowledge, but have also led to species extinction, illegal logging, deforestation, soil degradation, illegal migration, land appropriation, and poverty in the community. Elder Basa Khyang said that the imposition of the state’s natural resource management practices over Indigenous practices emerged as a unilateral perspective of management, and represents a serious threat to the community. Theorists have similarly argued (Barkes, 2003; Bowers, 2006; Escobar, 2008; Martusewicz, 2009; Smith, 2006; Spivak, 2006; Shiva, 2005) that outsiders’ management practices undermine and obstruct traditional communal practices through different development projects.

The Bangladesh non-Indigenous administrative structure is also identified as a significant colonial influence on the Laitu Khyeng Indigenous community’s natural resource management. Participants explained that the state administration took control over Indigenous land, water, and forest rights from Indigenous traditional administrative entities. Adnan and Dastider (2011) commented that the Bangladeshi state administration was advanced over the

Indigenous structure based on the pursuit of profits (p. 124). The authors argued (see also, Adnan, 2004; Chakma, 2010) that state administrative structures in the CHT are connected with “various kind of fraudulent activities and forgeries” (p. 124). Adnan and Dastider (2011) emphasized further that “the Forest Department has had a land-devouring role to date, grabbing Pahari [Indigenous] lands and promoting commercial plantations through aid-funded projects, while destroying the last of the natural forests of the CHT” (p.125). Similar conclusions were arrived at in studies conducted by CHT Indigenous scholar Chakma (2010) and Roy (2001, 2004).

Participants commented that the privileging of state administration over Indigenous traditional administration has led to the growth of unwanted development projects: projects that benefit neither local communities nor the local environment. Consistent with data provided by study participants, Adnan (2004) indicated that Khyeng community members “reported that they received little protection or help from the local police, administration and government officers. The officials and functionaries of these institutions were predominantly Bengali” (p. 71).

Outsider for-profit management projects are highlighted in the data as a form of colonial oppression imposed upon the Khyeng Indigenous community. Participants emphasized the role of for-profit companies in contributing to exploitation, displacement, deforestation, species extinction, and poverty that has devastated the community. The term outsider, used to depict invasive for-profit companies, may be clarified through drawing on Edward Said’s (1993) seminal work *Orientalism*. Said claimed that the imposition of the colonial outsider over local populations requires an unequal system of force, leading to processes of *otherness*. According to Said, the outsider creates forms of oppression and power inequality imposed

upon local people, much like the relationship between the occident and the orient and the hegemonic nature of colonial power. Escobar (2008) gave an in-depth explanation of how capital accumulation in globalized monoculture environmental resource management not only creates profit for owners, but also removes local people, their traditional practice, and their identity. Study participants emphasized that the various entities imposing monoculture and for-profit management projects and policies onto the Laitu Khyeng community have created marginalization, or “othering,” on their ancestor’s land.

In sum, the introduction of resource management policies and projects in the Laitu Khyeng community are a mechanism of ongoing colonialism in the region. Participants repeatedly argued that it is oppressive to change Indigenous cultures for the benefit of outsider resource extraction. In order to get to the root of the Laitu Khyeng Indigenous colonial problem in CHT, it is necessary to understand that colonial oppression is ongoing, and is enacted via non-Indigenous outsider profit makers, state administrators, and unwanted management projects.

Meanings of Sustainability

While current governmental and non-governmental management practices enacted within the Laitu Khyeng community are revealed as means through which poverty, health problems, land appropriation, and environmental degradation have become endemic in the region, traditional management practices disrupt the binary opposition between western (outsider) and Indigenous subjects – or the colonisers and the colonised (Amoamo & Thompson, 2010; Escobar, 2008).

As outlined in chapter two, although there is little agreement about what constitutes the term *sustainability*, the definition of sustainability varies by scale, context, place, and time

(Massey, 2005, 1994; Vos, 2007). Since the Brundtland Report (1987) was issued, definitions of sustainability have tended to adhere to an economic paradigm in order to guide its meaning. The concept of sustainability has found its way into many vocabularies and into a variety of contexts. However, the dominant paradigm based on an economic model became highly desirable, and has a greater influence than parallel conceptions, such as ecology, culture, and the social (Geiser, 2001; Meadow & Meadow, 2004). Thrupp (1998) and Vos (2006) have argued that profit-oriented definitions of sustainability may be linked to ongoing threats to poor nations' sustainable livelihood. They also explained that, in the dominant paradigm (i.e., economic profit), nature is seen as simply a resource of raw materials for the human economy. According to the authors, humans are viewed as being outside of nature, and dominating it (see also Smith, 2005). All nature resources are available for human use, ideally as determined by market demand (Escobar, 1995; Hunington et al., (2006).

Study participants define the term *sustainability* as the community's relational practices that serve local members' interests and needs in a mutually beneficial way. Sustainability is a complex array of interrelated relationships with natural resources: relationships founded on a notion that all components are living beings, and important for their physical, mental and spiritual survival and wellbeing. Such relationships are often reflected in and regulated by traditional rules and traditional legal systems, normally referred to as "customary Indigenous law." The complex and diverse meanings of sustainability are imagined by participants as hybrid, situational, relational, and responsible.

The hybrid character of the sustainable practice can provide insight about local environments in general (Altman, 2009). As Thrupp (1998) has argued, incorporating Indigenous hybrid practices into environmental sustainability can contribute to local

empowerment and development, increasing self-sufficiency and strengthening self-determination. Escobar (2001, 2008) theorized how Indigenous hybrid and relational practices of land use are vital for Indigenous sustainable livelihood. The Laitu Khyeng Indigenous community's everyday practice-based sustainability aligns with Bhabha's (1991) vision of hybridity. As articulated by Bhabha, the community's management is situational and transformational with their everyday practices. We learned from participants' stories that the Laitu Khyeng Indigenous community's hybrid practices can offer diverse opportunities:

- Locally appropriate knowledge: Indigenous knowledge represents a way of life that has evolved with the local environment; thus it is specifically adapted to the requirements of local conditions.
- Diversified production systems: There is no exploitation of a single resource. Risk is often mitigated by utilizing a number of subsistence strategies.
- Respect for nature: In Indigenous knowledge, the land is considered sacred, humans are dependent on nature for survival, and all species are interconnected. Indigenous knowledge values all living beings (both human and non-human).
- Flexible: Indigenous knowledge is able to adapt to new conditions and incorporate outside knowledge.
- Social responsibility: There are strong family and community ties, and with them feelings of obligation and responsibility to preserve the land for future generations.

Thus, the Laitu Khyeng's traditional hybrid management practices benefit of Indigenous knowledge as a foundational for effective sustainable practices (Altman, 2009).

A holistic perspective was discussed by participants as a prominent goal for explaining the community's sustainability. Participants relayed that a holistic approach combines Elders,

knowledge holders, leaders, and youth: it brings together all members to solve problems.

Altman (2009, 2004) suggested that this holistic approach is about how people address local and regional development, and the potential of multiple approaches to ensure sustainability. In other words, participants discussed holistic goals as diverse “ways of imagining life” (Escobar, 2011, p. 139) by and for the local community.

In addition to the role of situational and holistic views on sustainability, another main issue revealed in the study’s findings involves youth’s relational responsibilities. Youth sees their relational responsibilities as protecting the community’s traditional land management practices and building a sustainable livelihood. According to the United Nations (2013), youth are one of the significant stakeholders for community development and sustainability.

Similarly, Collins (2004) expressed that young people possess more significant power and potential today to create change on a global and local level than they have had in any previous generation. Likewise, others (e.g., Chawla 1998; Chataway, 1997; Sivek, 2002; Tanner, 1980) have stressed that youth’s collective responsibility as environmental leaders is important to their sustainability. In reflecting on their lives, Laitu Khyeng youth’s sense of collective responsibility as leaders and role models is significant to achieving sustainability. Thus, meanings of sustainability, as understood and practiced by the Laitu Khyeng Indigenous community are built around complexity, situatedness, relationships, and responsibility. These relational knowledge traits are an integral part of the physical, spiritual, and mental dimensions of the community’s systems of values and norms.

Having discussed four central contributions of the study toward understanding the possibilities of Indigenous land and water management, the impact of colonial encroachment,

and foundations of sustainability, I will now discuss the implications related to policy, practices, and research.

Implications for Policy and Practice

In this section, recommendations for policy and practice are presented together with brief explanations drawn from the data. The study results suggest that in order to realize environmental sustainability in the Laitu Khyeng Indigenous community, the following must be achieved:

- Protection of traditional cultivation culture and ways of life.
 - Government and nongovernment environmental resource management policies and practices that ensure protection for the traditional cultivation culture must be adopted.
 - Management policies and alliances must be formed with the Laitu Khyeng Indigenous peoples to defend their plain lands, forest lands, and water lands from exploitative development, and to advocate for the resolution of outstanding issues, such as the CHT Peace Accord and land claims. There is a need to recognise Indigenous administrative structure, where the resolution of these issues will strengthen the capacity of Laitu Khyeng peoples to protect their environmental resources and promote their sustainability.
 - Indigenous people must be supported to defend from unwanted development threats, including reserve forests, tobacco plantations, brick-field industrial companies, and lumber plantations.
 - Government and multinational environmental agencies must recognise the value of traditional knowledge and practices in Indigenous environmental resource

protection, and develop working relationships with Indigenous peoples based on the value and culture.

- The return of cultivated and uncultivated lands to the Laitu Khyeng community.
 - Lands grabbed from Indigenous peoples must be returned.
 - All lands illegally occupied should be recovered as soon as possible.
- Documentation and advancement of the Laitu Khyeng Indigenous community's traditional management culture and practices.
 - Traditional cultivation knowledge and practices must be documented and integrated into environmental resource management policies.
 - The traditional resource management administrative structure must be recognised as having equal authority and contribution as the state administrative structure.
 - A new standard of responsibility needs to develop between researchers, institutions, and Indigenous peoples, guiding access to traditional knowledge.
- Implementation of traditional knowledge-based environmental resource management education.
 - Indigenous people and traditional cultivation culture and practices must be included in the state education's institutional curriculum.
 - Traditional cultivation culture and practices must be recognised as equivalent to the state knowledge system.
- The design of development projects that adhere to Indigenous tradition and culture.
 - Development strategies must be based on Indigenous traditional culture and practice.

- Development of inclusive, participatory processes for generating development plans and policies.
 - Government and nongovernmental agencies must include Indigenous Elders, knowledge-holders, leaders, and youth in their development plans and policies.

In order to achieve environmental sustainability in the community, participants emphasize measures empowering youth in the community to learn wisdom of both Indigenous and scientific knowledge in support of their shared goals. Such an emphasis is directed toward community members as well as educational other governmental and non-governmental stakeholders active within the region. Elder participants also recommended, as an intra-community initiative monthly get-togethers to evaluate their educational and movement activities and strategies for protecting their land and water rights.

Personal Reflections

This research has touched me personally and professionally in many ways. It has enabled me to rebuild close relationships with the Laitu Khyeng Indigenous community through which I have come to learn of their rich culture, traditions, wisdom, celebration, spirituality, and their unique sustainable living. In this section, I present my reflections on the process of conducting the study under three headings: reflections on times when I took on the role of a learner, the role of a researcher, and the role of an activist.

Throughout this research, I have learned that research is a collective journey. Since our study was *with* and not *on* the participants, we collectively engaged with our research. Elder Basa Khyeng informed me that in the Laitu Khyeng Indigenous community's culture, there is no such thing called *other*. The community used the term *we* to find similarities, rather than a way of highlighting differences between people. According to participants, the word "we" has

insight, strength, and capability. Throughout this process, I have been anxious about doing research on what has been called “the other.” I was concerned about the exchange, or really, the lack of exchange, that characterizes the whole history of writing about other people. The term *we* also became a process for this research: we talked, we discussed, we challenged, we encouraged, and we made suggestions. We have worked through our differences, and tried to preserve those differences that highlighted important insights. Through this collective journey, I have built a relationship with this community, but I have also built a relationship with their struggle, and made it our struggle.

My second significant learning outcome involved a spiritual and emotional connection with the Laitu Khyeng Indigenous people, who opened their hearts and hearths to me. I am glad that as a researcher, and despite being a part of the western academia, I can claim to go beyond the stigma in which most researchers are “armed with *goodwill* in their *front pockets* and *patents* in their *back pockets* (Smith, 1999, p. 24).” Elders who participated in our study inspired me during our research by saying, “your voice is our voice; our struggle is your struggle. Collectively, we need to win.” I have found a parallel spiritual understanding and practice with land and water in the community. The community members believe that land and water are their god and parents, and cannot be replaced with an alien patriarchal god (i.e., Islam). I am thus humbled, and at the same time, reformed and enriched by this community.

Throughout this research, I kept asking “who am I and what am I doing here?” These feelings were an appropriate and necessary part of the collective research processes. The Elders taught me that I was not an outsider. I have been asked by Elders to, “tell our story to your people.” This method helped me to find the answers regarding who I am and what I am doing. The following questions were important for positioning me in this journey, and to realize that

this journey begins in our hearts and heads: How do we change? What do we believe and feel? And, what do we need to learn?

Research and activism. In addition to our collective field research, I had opportunities to participate in a number of the community's activities. I joined different movements (e.g., land-water rights, stopping tobacco, brick-field city demonstrations); disseminated research results with local audiences (e.g., governmental forest, land, and CHT ministries, NGOs, Indigenous research organizations, university professionals, and practitioners), multinational agencies (UNDP, UNSCO, and Caritas), international seminar presentations (Canada, Japan, Newzeland, Norway, USA); and produced local and international journal publications (i.e., four commonplace books and three international journal publications).

Various peaceful demonstrations for Indigenous land and water rights aimed at stopping unwanted development projects have inspired me and deeply situated me in this research. From my previous relationships with an Indigenous student group⁴⁶, I had the opportunity to know the CHT Indigenous leaders and activists. During our field research, I participated in three demonstrations: land and water rights; stopping tobacco plantation; and brick-field city demonstrations with CHT Indigenous leaders, student leaders, and activists in CHT, Bangladesh. During these demonstrations, I had the opportunity to meet and reconnect with different CHT Indigenous and minority communities' leaders, Elders, and activists. All three demonstrations were peaceful and involved large participation. I have come to realize that undertaking this study is a political activity, dedicated to the reclamation of Indigenous and my (as Indigenous and minority) rights (Becker, 1967). Thus, I see that our research is not neutral,

⁴⁶ I was Vice President of the Bangladeshi Indigenous and Minorities Student Rights Organization during 2003–2004.

rather it is grounded in both an academic and political responsibility to protect and reclaim our rights (which include environmental resource management, sustainability, and identity).

Disseminating research results with various organisations was a significant and memorable political activity for a number of reasons. First, since our research was the first academic research study conducted with this community, many of the speakers were presenting on the topic for the first time. Second, we had the opportunity to present our research results and recommendations to Bangladesh forest, land, and CHT ministries. Bangladesh's CHT Ministry Secretary, Information Ministry Secretary, Dhaka University Professors, and Journalists were invited to be panel speakers. The attendees were from many backgrounds, such as NGOs, Indigenous research organisations, university professionals, multinational agencies (UNDP, UNSCO, and Caritas), and students. The full seminar was recorded and broadcasted to a number of national TV stations and newspapers. We also presented at various international academic conferences (see Figure 10). Community participants contributed to the presentations through Skype.



Figure: 10, Co-researcher Participants Presenting Research Results. This figure's image was taken during a Association for Land Reform and Development (ALRD) seminar presentation in Dhaka, Bangladesh, June 2, 2013. Guest speakers were from Bangladesh's CHT Ministry Secretary, Information Ministry Secretary, Dhaka University Professors, and Journalists.

Another significant event that stands out in my reflection is re-establishing a previous professional relationship with Association for Land Reform and Development (ALRD) in order to publish and organize a seminar free of charge (see Figure11).



Figure: 11. *Seminar Invitation Card*. This figure's Invitation card distributed among local and national network such as: Government ministries (land, CHT, and forest), NGOs, Indigenous research organizations, university professional, students, and multinational agencies (UNDP, UNSCO, and Caritas).

Another activity that stood out for me in the research process was the production of four commonplace books by community members, which were subsequently provided to a range of stakeholders. Copies of these books were distributed to the Bangladesh forest, land, and CHT ministries, Universities, NGOs, Indigenous research organizations, students, and multinational agencies.

Finally, through our continuous efforts to publish journal articles, we have published in three international journals, and are working to publish in three more. To conclude this section, my reflections on conducting the study reveals instances where I acted as a learner and an activist, instead of as an observer, and became a more active participant.

In chapter five of the dissertation, I have discussed the main topics emerging from the data in response to the research questions, and have addressed the topics in relation to the existing literature. I have also offered suggestions for policy and practice, and for future research in the contexts of Laitu Khyeng land and water practices and management. I have concluded the discussion of the research with a personal reflection on what the process has meant to me personally and professionally. The final section of the dissertation considers how future research might be designed to further advance knowledge on the topic.

Implications for Future Research

As was pointed out in the introductory chapter, there is limited available research exploring Laitu Khyeng Indigenous natural resource management and sustainability, especially where the roles of traditional knowledge and practices are considered. While the few studies conducted in the CHT region of Bangladesh concerning environmental resource management (e.g., Adnan, 2004; Roy, 2000) and sustainability (Chakma, 2010) address Indigenous knowledge, there is little to no research available on land and water management issues in the Laitu Khyeng Indigenous community. There is a strong need for further research in this area. Based on the research findings, the study highlights a need for further research, designed according to considerations outlined below:

- As the literature review has shown, there are more than 11 Indigenous communities living in the CHT, Bangladesh. This research project addresses only one of these Indigenous communities. The first area for further research should be to investigate more Indigenous communities in order to expand and enrich understanding of the region. This must be undertaken through research questions and methodologies dedicated to protecting Indigenous traditional knowledge and culture and aligning with

similar research conducted with other Indigenous communities around environmental sustainability.

- This study suggested that traditional land and water resources are hybrid, relational spaces for vocational and spiritual practices connected with environmental sustainability. One possibility of further research would be to explore this by implementing the recommendations participants made about how environmental sustainability should be regained in the community. Since the Laitu Khyeng community is mostly dependant on their traditional cultivation culture, the recommendations would need to be integrated through state support.
- More research and support is needed around youth responsibility for achieving sustainability, including commitment demonstrated in state programming. For example, youth needs support for learning traditional cloth making, cultivation, and spirituality. Research programs could be designed around youth's sustainability goals that aid them in deciding which crops to grow and identifying which environmental management practices and policies to use. Local Elders and knowledge holders can be utilized in delivering instruction.
- The contribution of Indigenous traditional knowledge in working towards environmental sustainability seems clear. This study has revealed that there is a clear difference between Indigenous ways of practicing sustainability and the government's ideas of development and sustainability. Since much of Indigenous knowledge and practice in Bangladesh is undocumented, and could soon become extinct due to displacement and unwanted development projects, the study recommends further research documenting relevant CHT Indigenous knowledge and practices related to

environmental sustainability. It also recommends that such knowledge and practice be authentically represented in the institutional curriculum of formal education (e.g., primary school). Such knowledge and practice should be taught in a variety of ways, and should utilize the community's Elders and knowledge-holders.

- There is a need for more studies exploring the role of the concept of spirituality in sustainable land and water management. Elders in the study emphasised that youth should learn in school that according to spiritual principles of management, humans and nonhumans are collective and interdependent. Therefore, environmental management must respect both humans and nonhumans. More studies are required exploring how spirituality can provide a framework for illuminating and drawing insight from environmental sustainability practiced by communities in the CHT. Other studies could investigate the integration of spirituality into environmental resource management policies and practices, and in formal and informal educational settings.
- This study explored participants' understanding of the land, water and environmental management in relation to knowledge and practice. Future studies could focus on language, identity, and culture, as they link with sustainability. For example, a future research project could examine how a community identifies with cultural tradition and how those identifications affect their orientations to sustainability.
- Finally, our study has recommended compliance with the CHT Peace Accord; future studies could explore the sustainability link with the CHT Peace Accord. There could be comparison studies to find out how the CHT Peace Accord is significant for Indigenous identity, land rights, culture, and environmental sustainability.

Limitations of the Study

This study was limited to the Laitu Indigenous community from the Bandarban district (one of the CHT areas), but did not include another Khyeng Indigenous community (The Kantu Khyeng from the Rangamathi district in CHT). I have chosen this Laitu Indigenous community because I had worked in the region before and had been involved with their land and education rights movement in the area. As a result, I had a working knowledge of contacts and protocols for working with the Laitu Khyeng in the CHT.

My focus was specifically on local ways of approaching issues in the Laitu Khyeng villages and may carry with it certain assumptions of the community it is embedded in. Therefore, results cannot be generalized. In terms of research participants, the research was restricted to 12 participants (i.e., Elders, knowledge-holders, leaders, youths participants), and they were selected based on the Elders' recommendations. Perhaps other participants were not included that would have provided different views and perspectives; however, during our results presentation to the community there were other community members who participated.

An unexpected challenge was limited access to my research site due to a travel advisory by the Canadian Foreign Affairs Ministry. If I had full access to my research site, my learning experience would have had more in-depth and results may have varied.

Another limitation concerns viewing myself as an insider/outsider. I was treated as an insider all through research process due to my minority identity and personal relationships with the community. However, I was not able to speak the local language and had to depend on co-researcher participants' translations. Since I do not come from this community and I cannot speak the Laitu language, I lacked knowledge of how the community interacts and relates to

each other, and whether there are any politics and power issues within and across the tribes. If I were a native member of the community, perhaps I would have had different insights.

Concluding Remarks

This study was guided by a framework of “relational ontology” (Datta, 2015; Escobar, 2013; Kovach, 2005; McCoy, Tuck, & McKenzie, 2014; Wilson, 2008; 2007) set within the context of the CHT in Bangladesh. Contrasting a singular, western research model, the research methodology favours a model that is plural and reflects Laitu Khyeng culture, values, and sustainability traditions. In order to develop this theoretical framework in conjunction with the study data, we drew on the following four ideas: first, the concept of “relationality” articulated by Ingold (2011), Meyer (2001, 2008); Smith (2008), and Wilson (2008), including ideas introducing new ways of understanding actors and their interactions; second, the concept of hybridity through the works of Bhabha (1994), Little-bear (2000), and Whatmore (2006), and how the conceptualization may intersect with notions of a relational ontology; third, Said’s (1993) concept of “otherness;” and finally, Levi-Strauss’s (1966) concept of “scientific knowledge.” All four of these concepts challenge our fixed ways of knowing, doing, and acting by including traditional experiences and everyday practices as significant sources of knowledge. Such relational research framing opens up spaces for environmental resource management and sustainability more broadly. The study acknowledges that relationality is at its centre. In this relationality, “Actors, both human and non-human, living and non-living, and their actions are not only explained as relational, but also as spiritually interconnected, which makes one actor responsible to the other actors” (Datta, 2015, p. 2). Thus, this relational theoretical framework is a plural space where both humans and nonhumans co-exist in a way

that does not privilege one over the other (Cajete, 1994; Hultman & Taguchi, 2010; & Latour, 2004).

This study has determined that the Laitu Khyeng community contains a potential blueprint for a new relational environmental management approach. Community participants are committed to learning both Indigenous and non-Indigenous cultivation knowledge and practices. However, Elders emphasized that both sets of knowledge should be given equal priority. The community's relational understanding of natural resource management is not only about traditional cultivation culture, but it is also about understanding their nonhuman relationships, which include spiritual places, animals, water, foods, clothing, and education.

In order to move toward environmental sustainability in the Laitu Khyeng community, Elders asserted that community youth need to learn more traditional cultivation knowledge and practices, and address water protection, food sovereignty, identity, and spirituality. Educational curricula should be focused on traditional cultivation and cultural issues so that youth have the opportunity to learn about their own culture and cultivation. In addition to learning traditional cultivation culture, Elders and knowledge holders also emphasised that youth education should be linked with spiritual and relational knowledge, which is the base of their traditional sustainability.

The study has also examined the continued destructive impacts of colonialism in the CHT, including specifically within the Laitu Khyeng Indigenous community, through analysis of the following processes: privileging governmental and nongovernmental management policies over Indigenous traditional management practices; and privileging outsiders' brick-field industrial projects, tobacco plantations, and lumber plantations. These revelations of the study speak to the importance of engaging counter-hegemonic approaches as frames of

analysis. Considering that colonialism is still prevalent in the region, it is crucial that issues of colonial management and development policies be resolutely confronted from a critical orientation that challenges the status quo. This study thus applied a relational theoretical framework, with an emphasis on processes of challenging, decolonising, and reclaiming traditional cultivation knowledge and practices.

Another important implication of the study involves the potential toward building sustainability by recommending changes to current land, water, and natural management policies and practices. Even though CHT Indigenous traditional hybrid management practices have been locally relevant, scientific, and sustainable – empowered through local environmental management decision-making – the practices have been ignored in current government and nongovernmental natural resource management policies and actions. This research investigated how Indigenous land, water, and management are needed as forms of knowledge, policies, and practices in the Laitu Khyeng Indigenous community in order to promote environmental sustainability. The research makes a significant contribution to the existing literature in general, as well as contributes to the future of environment-related educational practices in Bangladesh and similar contexts.

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APPENDIX

APPENDIX A: RESEARCH BUDGET



THE UNIVERSITY OF SASKATCHEWAN

School of Environment and Sustainability

Table 3

The research budget for this study is explained.

Item	Unit	Unit Cost	Total Cost
Travel From Saskatoon to Dhaka, Bangladesh (A round trip)	1	\$2500	\$2500
Travel Dhaka to CHT within Bangladesh (to the site, within the community)	20	\$80	\$1600
Accommodation for 5 people (4months)	120	\$15	\$7200
Accommodation – Dhaka (20 Days)	20	\$50	\$1000
Honoraria for co-researchers for four months	4	\$500 (4x5)	\$10000
Gift for the Elders	20	\$10	\$200
Refreshments (after sharing circle with elders, knowledge holders, and youths) and Dinner	200	\$2	\$2000
Research materials (e.g. stationery, local literature)			\$800
Total			\$24300

APPENDIX B: INVITATION LETTER FOR CO-RESEARCHER PARTICIPANTS



THE UNIVERSITY OF SASKATCHEWAN

School of Environment and Sustainability

To a member of the Khyeng community

You are being invited to participate in a research study for a doctoral dissertation. The research will be conducted between the months of February and August 2013 at *Gungru Muke Para* and *Gungru Madom Para* in the Bandarban district in CHT, Bangladesh. In this study, I will examine how government land-management policies in the Chittagong Hill Tracts (CHT), Bangladesh affect traditional Indigenous practices with a particular focus on your community.

The purpose of the study is to investigate the traditional and current forms of land management, and how the Khyeng Indigenous people in the surrounding area of Bandarban District are or are not being integrated into those experiences. Should you agree to be involved in the study, your responsibilities would include such things as:

- Helping to identify volunteer participants (such as Elders, knowledge holders, and youth participants) for this research.
 - Facilitating traditional sharing circles with as Elders, knowledge holders, and youth participants
 - Helping with photo-voice (participants will be requested to take pictures of their home--focusing on plants, animals, birds, land, moon, rocks, and so on and then share their relational stories connected to their particular pictures).
 - Recording traditional sharing circles and individual storytelling discussions
 - Maintaining a commonplace book, which can used to record your personal observations, art, poems, experiences, stories with the environment, field notes, etc
 - Participating in bi weekly meeting regarding research progress, planning, and others.
 - Involving also being part of a focus group discussion with other research assistants.
- Other responsibilities may be necessary and will be discussed with you as they arise

Please note that I am not coming in to evaluate or judge your knowledge or experience, I am purely interested in learning about your relationships with your environment such as land, plants, rocks, and so on. You will also be requested to participate in a discussion with other co-researcher in which they will share their findings after their conversation with the Elders.

All the data collected from the study will be securely stored by my supervisor, Dr. Marcia McKenzie, for a minimum of five years and will then be destroyed. To assure confidentiality of your participation in the research, all names will be replaced by pseudonyms in the dissertation

and any publications. You will have the opportunity to choose your own pseudonym should you wish.

I would like to assure you that my study adheres to research ethics and has been approved by the University of Saskatchewan Behavioral Research Ethics Board. I am attaching a copy of the approval letter.

Your participation is voluntary, and you may withdraw from the study anytime you wish. Withdrawal will not jeopardize you in any way whatsoever.

If you are interested in learning more about this study, please contact me or my supervisor at the address below and more details will be provided.

You will receive a \$200 honorarium each month for 4 months as a symbol of respect. You will not be expected more than 20 hours per week.

I will be meeting you in the near future after you have had the chance to consider my request. Thank you for considering being involved in this study.

Sincerely,

Ranjan Kumar Datta

Contact Information

Researcher:

Ranjan Kumar Datta
School of Environment and Sustainability
University of Saskatchewan
Room 323, Kirk Hall
117 Science Place
Saskatoon, SK S7N 5C8
Canada
Tel: 011 306 370 5821, Fax: 011 306 966 2298
Email: ranjan.datta@usask.ca; rda027@gmail.com

Address in Bangladesh

House No. 125, West Paikpara
Brahmanbaria Sadar- 3400
Brahmmanbaria,
Bangladesh
Tel: +8801710835824

Supervisor:

Marcia McKenzie, Ph.D.

Department of Educational Foundations
University of Saskatchewan
28 Campus Drive, Saskatoon, SK
Canada, S7N 0X1,
Tel: 011 306.966.7551
Email: marcia.mckenzie@usask.ca

APPENDIX C: INTRODUCTION TO PARTICIPANTS



THE UNIVERSITY OF SASKATCHEWAN

School of Environment and Sustainability

To a member of the Khyeng community

My name is Ranjan Kumar Datta. I am a PhD student at the University of Saskatchewan in Canada. I am interested in learning about your traditional culture and customs regarding your land-management; government and non-governmental land management policies that impact your traditional land management; and your expectations regarding how land management policies should be.

I would like to sit down and have a conversation with you about these issues (*Suggested questions in Appendices: G-Traditional Sharing Circle (TSC) for Elders, knowledge holders, and youth participants; H-Individual Story Telling for Elders, knowledge holders, and youth participants; I- Common place book for Co-researchers*). Please note that I am here to learn from you and not evaluate or judge you as such there are no right or wrong answers.

I would like to record our conversation but if you are uncomfortable to have your voice recorded, please feel free to say so. All information provided during our discussions will be kept strictly confidential and all names will be replaced with pseudonyms for publication. You may choose your own pseudonym if you so desire.

I will also be observing your field practices and will take notes. Again this is not an evaluation but a learning process for me so act normal and ignore my presence.

For youth—I would like to do an activity with you. I want to learn your views on the places you identify with considering the cultural knowledge and practices of this area.

- *This will be the photo-voice exercise. I will ask them to share their stories using particular photos of places from their community that they identify with and include a narrative. We will discuss their pictures during a focus group later.*

Once the study is complete, I will make the findings available to Khyeng Indigenous committee. Research reports will also be shared with the home ministry, Indigenous and Forest Ministry, UNDP, and other research organizations if your community supports this. I will also publish the findings in academic journals and I will include community Elders or others as co-authors.

Participation in the study is completely voluntary. Please note that your participation may be withdrawn at any time during the study without providing reasons for doing so if you so wish. Withdrawal will not jeopardize you in any way whatsoever.

If you would like to participate in the study, I will ask you to read and sign a consent form.

- *for Elders, I will have a verbal consent. I will read it to them and sign it*
- *for youth, I will have a guardian consent form. I will ask the youth to take the form home to their guardians to sign. If a guardian will be unable to sign due to oral versus print-based literacy, I will have a verbal consent form just like with the Elders.*

Do you have any questions?

APPENDIX D: CO-RESEARCHER PARTICIPANTS CONSENT FORM



THE UNIVERSITY OF SASKATCHEWAN

School of Environment and Sustainability

Co-researcher Consent Form

You are invited to participate in a research study entitled *Meanings of Land-Management and Sustainability: An Indigenous Perspective in Khyeng Community, Chittagong Hill Tracts (CHT), Bangladesh*

Please read this form carefully, and feel free to ask questions you might have.

Researcher:

Ranjan Kumar Datta, School of Environment and Sustainability, University of Saskatchewan, Room 323, Kirk Hall, 117 Science Place, Saskatoon, SK S7N 5C8, Canada

Tel: 011 306 652 0742, Fax: 011 306 966 2298

Email: ranjan.datta@usask.ca; rda027@gmail.com

Address in Bangladesh

House No. 125, West Paikpara, Brahmanbaria Sadar- 3400, Brahmanbaria,, Bangladesh

Tel: +8801710835824

Supervisor:

Dr. Marcia McKenzie, Department of Educational Foundations, University of Saskatchewan, 28 Campus Drive, Saskatoon, SK S7N 0X1 Canada

Tel: 011 306.966.7551, Email: marcia.mckenzie@usask.ca

Purpose:

The purpose of the study is to investigate state land management policies in the CHT, Bangladesh, and how they affect the Khyeng community and their traditional practices. The research will be conducted between the months of February and September 2013.

Study Procedures:

Should you agree to be involved in the study, your participation will involve being part of a focus group discussion with other research assistants. Your responsibilities include maintaining commonplace book, helping to identify volunteer participants (e.g., Elders, knowledge holders, youth participant), facilitating traditional sharing circle, individual storytelling, helping with photo-voice, recording, and others (bi-weekly meeting).

For your commonplace book which can be used for recording your personal observation, arts, poem, experiences, stories with environment, and field notes. Please note that I am not coming in to evaluate or judge your knowledge or experience, I am interested in learning about the your relationships with your environments such as land, plants, rocks, and so on. You will also be requested to participate in a discussion with other students in which they will share their findings after their conversation with the Elders.

Direct quotations from the discussions may be used in the research; references to names, locations, or other identifying features will be removed. Once the study is complete, the researcher will make the findings available to the Khyeng Indigenous. Hopefully the findings will contribute to positive change for the Khyeng Indigenous peoples and their land-management. The findings will also be published in academic journals.

Potential Benefits:

You may enjoy conversations with others in their community, learn about the issues and potential solutions regarding land management, feel a great connection to home. You will be shared ownership of the research results. Your community's Elders or others (consulting with community Elders) will be co-author of future publications. Your community can get access on research results, including prints, audio and video, and digital materials.

Potential Risks:

There are no known or foreseeable risks associated with your participation in the study.

Confidentiality:

To assure confidentiality of your participation in the research, all names will be replaced by pseudonyms in the dissertation and any publications. You may choose your own pseudonym should you wish. All taped recordings and transcripts will be analyzed only by the researcher. Although all efforts will be taken to keep your identity confidential, full confidentiality cannot be guaranteed. Original copies of research data will be securely stored by the researcher's supervisor for a minimum of five years and then destroyed.

As a member of a focus group discussion, you are expected to protect the integrity and confidentiality of what others in the group have said during discussions.

If you would like to choose your own pseudonym, write it here _____

Right to Withdraw:

Your participation is voluntary, and you can respond to only those questions that you are comfortable with. You may withdraw from the research project for any reason, at any time, without penalty of any sort. If you withdraw from the research project at any time, any data that you have contributed may be destroyed at your request. Please note that your right to withdraw data from the study will apply until December 1, 2013. After this it is possible that some form of research dissemination will have already occurred and it may not be possible to withdraw your data.

Contact for Information about the Study:

If you have any questions or wish further information with respect to this study, you may contact the researcher, Ranjan Kumar Datta or his supervisor, Dr. Marcia McKenzie using the above contact information.

Contact for Concerns about the Rights of Research Subjects:

This research project has been approved on ethical grounds by the University of Saskatchewan Behavioural Research Ethics Board on ----- . If you have any questions regarding your rights as a participant, feel free to contact the Research Ethics Office, **University of Saskatchewan, Box 5000 RPO University, Saskatoon, SK S7N 4J8, Canada; Tel: 011 306 966-2084;** Email: ethics.office@usask.ca.

Consent to Participate:

I have read and understood the description provided; I have had an opportunity to ask questions and my questions have been answered. I consent to participate in the research project, understanding that I may withdraw my consent at any time. A copy of this Consent Form has been given to me for my records.

(Name of Participant)

(Date)

(Signature of Participant)

(Signature of Researcher)

APPENDIX E: CONSENT FORM FOR ELDER AND KNOWLEDGE HOLDER



THE UNIVERSITY OF SASKATCHEWAN

School of Environment and Sustainability

ORAL CONSENT FORM FOR ELDER AND KNOWLEDGEHOLDERS

You are invited to participate in a research study entitled **Meanings of Land-Management and Sustainability: An Indigenous Perspective in Khyeng Community, Chittagong Hill Tracts (CHT), Bangladesh**

Please read this form carefully, and feel free to ask questions you might have.

Ranjan Kumar Datta, School of Environment and Sustainability, University of Saskatchewan, Room 323, Kirk Hall, 117 Science Place, Saskatoon, SK S7N 5C8, Canada

Tel: 011 306 652 0742, Fax: 011 306 966 2298

Email: ranjan.datta@usask.ca; rda027@gmail.com

Address in Bangladesh

House No. 125, West Paikpara, Brahmanbaria Sadar- 3400, Brahmanbaria,, Bangladesh

Tel: +8801710835824

Supervisor:

Dr. Marcia McKenzie, Department of Educational Foundations, University of Saskatchewan, 28 Campus Drive, Saskatoon, SK S7N 0X1 Canada

Tel: 011 306.966.7551, Email: marcia.mckenzie@usask.ca

Purpose:

The purpose of the study is to investigate state land management policies in the CHT, Bangladesh, and how they affect the Khyeng community and their traditional practices. The research will be conducted between the months of February and September 2013.

Study Procedures:

Should you agree to be involved in the study, your participation will involve being part of a focus group discussion with other research assistants. Your responsibilities include maintaining commonplace book, helping to identify volunteer participants (e.g., Elders, knowledge holders, youth participant), facilitating traditional sharing circle, individual storytelling, helping with photo-voice, recording, and others (bi-weekly meeting).

For your commonplace book which can be used for recording your personal observation, arts, poem, experiences, stories with environment, and field notes. Please note that I am not coming

in to evaluate or judge your knowledge or experience, I am purely interested in learning about the your relationships with your environments such as land, plants, rocks, and so on. You will also be requested to participate in a discussion with other students in which they will share their findings after their conversation with the Elders.

Direct quotations from the discussions may be used in the research; references to names, locations, or other identifying features will be removed. Once the study is complete, the researcher will make the findings available to the Khyeng Indigenous. Hopefully the findings will contribute to positive change for the Khyeng Indigenous peoples and their land-management. The findings will also be published in academic journals.

Potential Benefits:

You may enjoy conversations with others in their community, learn about the issues and potential solutions regarding land management, feel a great connection to home. You will be shared ownership of the research results. Your community's Elders or others (consulting with community Elders) will be co-author of future publications. Your community can get access on research results, including prints, audio and video, and digital materials.

Potential Risks:

There are no known or foreseeable risks associated with your participation in the study.

Confidentiality:

To assure confidentiality of your participation in the research, all names will be replaced by pseudonyms in the dissertation and any publications. You may choose your own pseudonym should you wish. All taped recordings and transcripts will be analyzed only by the researcher. Although all efforts will be taken to keep your identity confidential, full confidentiality cannot be guaranteed. Original copies of research data will be securely stored by the researcher's supervisor for a minimum of five years and then destroyed.

As a member of a focus group discussion, you are expected to protect the integrity and confidentiality of what others in the group have said during discussions.

If you would like to choose your own pseudonym, write it here _____

Right to Withdraw:

Your participation is voluntary, and you can respond to only those questions that you are comfortable with. You may withdraw from the research project for any reason, at any time, without penalty of any sort. If you withdraw from the research project at any time, any data that you have contributed may be destroyed at your request. Please note that your right to withdraw data from the study will apply until December 1, 2013. After this it is possible that some form of research dissemination will have already occurred and it may not be possible to withdraw your data.

Contact for Information about the Study:

If you have any questions or wish further information with respect to this study, you may contact the researcher, Ranjan Kumar Datta or his supervisor, Dr. Marcia McKenzie using the above contact information.

Contact for Concerns about the Rights of Research Subjects:

This research project has been approved on ethical grounds by the University of Saskatchewan Behavioural Research Ethics Board on ----- . If you have any questions regarding your rights as a participant, feel free to contact the Research Ethics Office, **University of Saskatchewan, Box 5000 RPO University, Saskatoon, SK S7N 4J8, Canada; Tel: 011 306 966-2084;** Email: ethics.office@usask.ca.

Consent to Participate:

I have read and understood the description provided; I have had an opportunity to ask questions and my questions have been answered. I consent to participate in the research project, understanding that I may withdraw my consent at any time. A copy of this Consent Form has been given to me for my records.

(Name of Participant)

(Date)

(Signature of Participant)

(Signature of Researcher)

APPENDIX F: GUARDIAN CONSENT FORM: ENGLISH VERSION



THE UNIVERSITY OF SASKATCHEWAN

School of Environment and Sustainability

CONSENT FORM FOR GUARDIAN

Your child is invited to participate in a research project entitled, ***Meanings of Land-Management and Sustainability: An Indigenous Perspective in Khyeng Community, Chittagong Hill Tracts (CHT), Bangladesh***. As a parent/guardian, the following information applies to your child

Please read this form carefully, and feel free to ask questions you might have.

Ranjan Kumar Datta, School of Environment and Sustainability, University of Saskatchewan, Room 323, Kirk Hall, 117 Science Place, Saskatoon, SK S7N 5C8, Canada
Tel: 011 306 652 0742, Fax: 011 306 966 2298
Email: ranjan.datta@usask.ca; rda027@gmail.com

Address in Bangladesh

House No. 125, West Paikpara, Brahmanbaria Sadar- 3400, Brahmanbaria,, Bangladesh
Tel: +8801710835824

Supervisor:

Dr. Marcia McKenzie, Department of Educational Foundations, University of Saskatchewan, 28 Campus Drive, Saskatoon, SK S7N 0X1 Canada
Tel: 011 306.966.7551, Email: marcia.mckenzie@usask.ca

Purpose

The purpose of the study is to investigate to examine state land management policies in the CHT, Bangladesh, and how they affect the Khyeng community, including in relation to traditional practices. The research will be conducted between the months of February and September 2013.

Study Procedures:

Your child's participation in this study may involve observation, tape recorded group discussions, conversations with the Elders, and being photographed in class or during group discussions or interactions. Your child will continuously be briefed on the research process through out. Direct quotations from the conversations and group discussions may be used in the research representation with all references to names, locations, or other identifying features removed. The researcher will try to verify the information collected with the participants. Once the study is complete, the researcher will make the findings available to the Khyeng Indigenous

community. Hopefully the findings will contribute to program enhancement. The findings will also be published in academic journals. Should he get funding to travel back to Bangladesh, he will come back to the community to personally present the findings of the study to participants including your ward.

Potential Benefits:

Your child may enjoy conversations with others in your community, learn about the issues and potential solutions regarding land management, feel a great connection to home. Your child will be shared ownership of the research results. Your community's Elders or others (consulting with community Elders) will be co-author of future publications. Your community can get access on research results, including prints, audio and video, and digital materials.

Potential Risks:

There are no known or foreseeable risks associated with your participation in the study.

Confidentiality:

Your child will not be identified by name in any publication of the study findings. All efforts will be taken to keep your child's identity confidential through removal of any possible identifying references, however, full confidentiality cannot be guaranteed. All taped recordings and transcripts will be analyzed only by the researcher. Original copies of research data will be kept in a locked location by the researcher's supervisor for a minimum of five years and then destroyed.

If your child decides to participate in a focus group discussion with others, he/she will be expected to protect the integrity and confidentiality of what others in the group have said during discussions.

Right to Withdraw:

Your child's participation is voluntary. He/she may withdraw from the research project for any reason, at any time, without penalty of any sort. If your ward withdraws from the research project at any time, any data that they will have contributed will be destroyed at your request. Please note that your child's right to withdraw data from the study will apply until December 1, 2013. After this it is possible that some form of research dissemination will have already occurred and it may not be possible to withdraw your child's data.

Contact for Information about the Study:

If you have any questions or wish further information with respect to this study, you may contact the researcher, Ranjan Kumar Datta or his supervisor, Dr. Marcia McKenzie using the above contact information.

Contact for Concerns about the Rights of Research Subjects:

This research project has been approved on ethical grounds by the University of Saskatchewan Behavioural Research Ethics Board on ----- . If you have any questions regarding your ward's rights as a participant, feel free to contact the Research Ethics Office, **University of Saskatchewan, Box 5000 RPO University, Saskatoon, SK S7N 4J8, Canada; Tel: 011 306 966-2084; Email: ethics.office@usask.ca.**

Consent to Participate:

Your child's participation in this study is entirely voluntary and they may refuse to participate or withdraw from the study at any time without penalty.

Please indicate which forms of research you are willing to have your ward participate in using the checkboxes below (please check all that apply). Your signature below indicates that you have received a copy of this consent form for your own records, and indicates that you consent to have your ward participate in this study to the extent indicated by your check mark(s) below.

- ☐ I consent to my child being observed by the researcher involved in the study.
- ☐ I consent to my child being photographed for the purposes of the study.
- ☐ I consent to my child participating in tape-recorded group discussions.
- ☐ I consent to my child participating in having a conversation with the Elders.

Guardian Signature

Date

Printed Name of the Ward

APPENDIX G: TRADITIONAL SHARING CIRCLE (TSC) PROTOCOL

TRADITIONAL SHARING CIRCLE PROTOCOL FOR ELDERS

Date

Number of Participants

My role, as the facilitator and researcher, is to provide structure and guidance to the traditional sharing circle (TSC) according to Khyeng Indigenous community's culture. The discussion will focus on my three research questions:

- What were traditional Indigenous Khyeng land-management customs and practices, particularly in relation to environmental sustainability?
- To what extent are Khyeng community members affected by introduced land-management policies, such as those promoted by government, NGOs, commercial companies, and multinational agencies?
- What are Khyeng hopes and expectations regarding land-management policies and practices, particularly in relation to environmental sustainability?

Introduction

- Introduce each other
- Explain research objectives, goals, and participant's benefits

Sample questions for In-depth Interviewing:

- How would you describe your community? (name and identity)
- How did your ancestor use to take care of your land, plants, animals, and others?
- Describe your ancestors' customs (such as, spirituality, ceremonies, and belief systems) and cultivation processes.
- What kinds of ceremonies had your ancestors use to practice in taking care of land (such as, sacrificing ceremonies, gift exchange ceremony, dance ceremonies etc.)?
- How did your ancestors use to distribute land, forest resources, and others in your community?
- What did land and forest management mean to your ancestors?
- How did your ancestors use to celebrate social ceremonies (such as, marriage, child birth, and others) in connection with land production?
- How were crop selections in your ancestors' time?
- How were crop selections correlated with long term economic planning?
- What were different types of animals hunted (through trapping, etc.)?

- What were your ancestor staple foods? How did your ancestors collect or trap these sources of food?
 - How did your ancestors hunting, trapping, and collecting edible vegetables from the forest contribute to their subsistence?
 - Did your ancestors have domestic animals?
 - What kinds of animals did your ancestors consume during ritual ceremonies?
 - Describe your ancestors' exchange system(s). How were these exchange systems connected with their forest and other resources?
-
- Do you see any changes in the life of Khyeng after the emergence of Bangladesh? If so, what are the changes you think have occurred?
 - How have the land management practices been changed over last 20 -30 years in your area?
 - Which institutions are associated with changing traditional land management policies (Government, NGOs, private companies, multinational agencies)?
 - How have the changes been happening? Who has benefitted from these changes?
 - How do these changes affect your ancestral land management practices?
 - What are the meanings of reserve forest to your community?
 - How many areas are recorded as reserve forest? What does government and/or other agencies do in this reserve forest?
 - Do you have sufficient land for your family members?
 - What do you like or dislike about living in this particular area?
 - Can you describe your current land practice management in relation to main stream settlers?
 - Do you feel threatened/scared when you are practicing your traditional cultivation, ceremonies, and practices?
 - What do you do in your everyday life? Where do you cultivate?
 - Do you think you enjoy your land rights as other Indigenous communities do? If not? Why?
 - Do you think you enjoy your land rights as Bangladeshi settlers do? If not? Why?
 - Is the government taking care of Khyeng as Bangladeshi settlers?
 - What do you think of the sensitivity of the mainstream people towards Khyeng issues?
 - Do you think Bangladeshi settlers are different from your community? If yes, how?
 - Does your community have land right?

- Do you belong to any political party?
- Can you vote?
-
- How would you like to define land-management in your community?
- How would you like to define sustainability in your community?
- How do you want to see land and forest management policies?
- What are your exceptions of the Bangladesh Government in protecting your traditional customs, practices, and land management rights?
- How do you want to practice your traditional land-management policies as a community?
- What kinds of land policies do your community want to practice?
- How does your community think the Bangladesh Government should value your traditional practices?
- What kinds of political involvement does your community have for protecting traditional land management practices?
- Would you like to add anything else?

APPENDIX H: TRADITIONAL SHARING CIRCLE (TSC) PROTOCOL FOR KNOWLEDGE HOLDERS

Date

Number of Participants

My role, as the facilitator and researcher, is to provide structure and guidance to the traditional sharing circle (TSC) according to Khyeng Indigenous community's culture. The discussion will focus on my three research questions:

- What were traditional Indigenous Khyeng land-management customs and practices, particularly in relation to environmental sustainability?
- To what extent are Khyeng community members affected by introduced land-management policies, such as those promoted by government, NGOs, commercial companies, and multinational agencies?
- What are Khyeng hopes and expectations regarding land-management policies and practices, particularly in relation to environmental sustainability?

Introduction

- Introduce each other
- Explain research objectives, goals, and participant's benefits

Sample questions for In-depth Interviewing:

- How would you describe your community? (name and identity)
- How did your ancestor use to take care of your land, plants, animals, and others?
- Describe your ancestors' customs (such as, spirituality, ceremonies, and belief systems) and cultivation processes.
- What kinds of ceremonies had your ancestors use to practice in taking care of land (such as, sacrificing ceremonies, gift exchange ceremony, dance ceremonies etc.)?
- How did your ancestors use to distribute land, forest resources, and others in your community?
- What did land and forest management mean to your ancestors?
- How did your ancestors use to celebrate social ceremonies (such as, marriage, child birth, and others) in connection with land production?
- How were crop selections in your ancestors' time?
- How were crop selections correlated with long term economic planning?
- What were different types of animals hunted (through trapping, etc.)?
- What were your ancestor staple foods? How did your ancestors collect or trap these sources of food?

- How did your ancestors hunting, trapping, and collecting edible vegetables from the forest contribute to their subsistence?
- Did your ancestors have domestic animals?
- What kinds of animals did your ancestors consume during ritual ceremonies?
- Describe your ancestors' exchange system(s). How were these exchange systems connected with their forest and other resources?
-
- Do you see any changes in the life of Khyeng after the emergence of Bangladesh? If so, what are the changes you think have occurred?
- How have the land management practices been changed over last 20 -30 years in your area?
- Which institutions are associated with changing traditional land management policies (Government, NGOs, private companies, multinational agencies)?
- How have the changes been happening? Who has benefitted from these changes?
- How do these changes affect your ancestral land management practices?
- What are the meanings of reserve forest to your community?
- How many areas are recorded as reserve forest? What does government and/or other agencies do in this reserve forest?
- Do you have sufficient land for your family members?
- What do you like or dislike about living in this particular area?
- Can you describe your current land practice management in relation to main stream settlers?
- Do you feel threatened/scared when you are practicing your traditional cultivation, ceremonies, and practices?
- What do you do in your everyday life? Where do you cultivate?
- Do you think you enjoy your land rights as other Indigenous communities do? If not? Why?
- Do you think you enjoy your land rights as Bangladeshi settlers do? If not? Why?
- Is the government taking care of Khyeng as Bangladeshi settlers?
- What do you think of the sensitivity of the mainstream people towards Khyeng issues?
- Do you think Bangladeshi settlers are different from your community? If yes, how?
- Does your community have land right?
- Do you belong to any political party?
- Can you vote?

-
- How would you like to define land-management in your community?
 - How would you like to define sustainability in your community?
 - How do you want to see land and forest management policies?
 - What are your exceptions of the Bangladesh Government in protecting your traditional customs, practices, and land management rights?
 - How do you want to practice your traditional land-management policies as a community?
 - What kinds of land policies do your community want to practice?
 - How does your community think the Bangladesh Government should value your traditional practices?
 - What kinds of political involvement does your community have for protecting traditional land management practices?
 - Would you like to add anything else?

APPENDIX I: TRADITIONAL SHARING CIRCLE (TSC) PROTOCOL FOR YOUTH

Date

Number of Participants

My role, as the facilitator and researcher, is to provide structure and guidance to the traditional sharing circle (TSC) according to Khyeng Indigenous community's culture. The discussion will focus on my three research questions:

- What were traditional Indigenous Khyeng land-management customs and practices, particularly in relation to environmental sustainability?
- To what extent are Khyeng community members affected by introduced land-management policies, such as those promoted by government, NGOs, commercial companies, and multinational agencies?
- What are Khyeng hopes and expectations regarding land-management policies and practices, particularly in relation to environmental sustainability?

Introduction

- Introduce each other
- Explain research objectives, goals, and participant's benefits

Sample questions for In-depth Interviewing:

- What do you do in the field?
- With whom do you go to the field?
- How do your land practices styles differ from your parents' and ancestors' styles?
- What are the main challenges you face in your cultivation processes?
- What kinds of school do you have in your community?
- Do you get education regarding your traditional land management practices?
- If yes, would you please explain what you learn regarding your ancestors' land management?
- If not, why do you think your school does not teach you about traditional land management?
- How many hours do you work in land? How many hours do your parents work in the field?
- How many hours do you spend at school?
- Is there any private company in your area?
- Are you allowed to go to reserve forest and/or private companies?
- Do your family members work in these companies?

- What are the meanings of reserve forest to your community?
- How many areas are recorded as reserve forest? What does government and/ or other agencies do in this reserve forest?
- Do you have sufficient land for your family members?
- What do you like or dislike about living in this particular area?
- Can you describe your current land-management in relation to main stream settlers' practices?
- Do you feel threatened/scared when you are practicing your traditional cultivation, ceremonies, and practices?
- What do you do in your everyday life? Where do you cultivate?
- Do you think you enjoy your land rights as other Indigenous communities do? If not? Why?
- Do you think you enjoy your land rights as Bangladeshi settlers do? If not? Why?
- Is the government taking care of Khyeng as Bangladeshi settlers?
- What do you think of the sensitivity of the mainstream people towards Khyeng issues?
- Do you think Bangladeshi settlers are different from your community? If yes, how?
- Does your community have land rights?
-
- How would you like to define management in your community?
- How would you like to define sustainability in your community?
- How do you want to see land and forest Management policies?
- What are your expectations to Bangladesh Government in protecting your traditional customs, practices, and in land management rights?
- How do you want to practice your traditional land-management policies as a community?
- What kinds of land policies does your community want to practice?
- How does your community think the Bangladesh Government should value your traditional practices?
- What kinds of political involvement does your community have for protecting traditional land management practices?
- Would you like to add anything else?

APPENDIX J: TSC PROTOCOL FOR ELDERS, KNOWLEDGE HOLDERS, AND YOUTH

Date

Number of Participants

Sharing Research Results with Elders, Knowledge holders, and Youth Collecting Additional
Information

APPENDIX K: INDIVIDUAL STORY SHARING (ISS) PROTOCOL

IST PROTOCOL FOR ELDER AND KNOWLEDGE-HOLDER

Date

Number

My role, as the facilitator and researcher, is to provide structure and guidance to the Individual story sharing according to Khyeng Indigenous community's culture followed by my three research questions:

- What were traditional Indigenous Khyeng land-management customs and practices, particularly in relation to environmental sustainability?
- To what extent are Khyeng community members affected by introduced land-management policies, such as those promoted by government, NGOs, commercial companies, and multinational agencies?
- What are Khyeng hopes and expectations regarding land-management policies and practices, particularly in relation to environmental sustainability?

Introduction

- What does land and land-management mean to you?
- Would you please share your childhood relationships/stories about your land, trees, stone, moon, sun, falls, and so on?
- Do you know about the aspiration of others for this place (your ancestors)?
- What place or places do you identify with and why?
- How do you explain your relationships with your land, trees, stone, moon, sun, falls, and so on?
- How do you take care of your land, trees, stone, moon, sun, falls, and so on?
- Would you please explain your spiritual celebrations with your land, trees, stone, moon, sun, falls, and so on?
- Would you please share your memories of particular trees, plants, animals, and so on?
.....
- What do you do in the field?
- With whom do you go to field?
- How do your land practices styles differ from your parents and ancestors?
- What are the main challenges you facing in your cultivation processes?
- What kinds of school do you have in your community?
- Do you get education regarding your traditional land management practices?
- If yes, would you please explain what do you learn regarding your ancestor land management?
- How do you explain your current relationships with your cultivation, plants, land, and animals?

- What is the purpose or multiple purpose of each particular plant, tree, land, and animal?
- How do your interactions play out in particular plants, trees, land, and animals?
- How do you see mainstream cultivation practices compared to your traditional practices?
- What do you think about mainstream education/western education systems (which are not related to your cultivation system, cultural, and traditional experiences)? Please explain
- How do government reserved forests, artificial horticulture, and other development programs affect you /your family's cultivation, your relationships with management? Please explain
- Would you please explain how new forms of land management policies are affecting your traditional practices?
- How do Bangladeshi settlers interact with you and your family in village markets, cultivating land, and forest?
- What is the role of the Bangladesh Government regarding the existence of the Khyeng community land rights?
- Are you a Bangladeshi citizen? If so, what does it mean to you?
- How do you feel about your current spiritual belief? Please describe in more detail?
- Do you feel you have all the privileges and rights of a citizen of Bangladesh?
- Would you please tell me your symbiotic relationships with land, trees, and animals?
- In your opinion, what are the main causes of this negligence?
-
- How do you expect land-management policies should be?
- How do you want to save your spiritual relationships with your land and forest?
- What does development mean to you? What do you think development should be?
- What does science mean to you? What do you think science should be?
- Would you please share how your community's traditional practices with the environment such as land, animals, cultivation, and production, are significant for your community?
- How do you think children and youth should learn your traditional practices?
- How do you want to teach your children regarding your spiritual practices?
- Do you think traditional land-management knowledge is important to protect your identity as Khyeng? If so, why?
- What political and cultural condition(s)could be beneficial for the Khyeng land-management?
- How does the situation of the Khyeng change with the change of a government?
- Do you ever receive any favour from the government? What kind of favour do you expect from the government or the mainstream population to save your ancestor land-management and environment resources?
- How are your spiritual beliefs related to your land-management?
- What are the dreams and aspirations you have for your land and environment?
- Would you like to add or cut anything?

APPENDIX L: IST PROTOCOL FOR YOUTH

Date

Number

My role, as the facilitator and researcher, is to provide structure and guidance to the Individual story haring according to Khyeng Indigenous community's culture followed by my three research questions:

- What were traditional Indigenous Khyeng land-management customs and practices, particularly in relation to environmental sustainability?
- To what extent are Khyeng community members affected by introduced land-management policies, such as those promoted by government, NGOs, commercial companies, and multinational agencies?
- What are Khyeng hopes and expectations regarding land-management policies and practices, particularly in relation to environmental sustainability?

Introduction

- What does land and land-management mean to you?
- Would you please share your personal stories about your land, trees, stone, moon, sun, falls, and so on?
- Do you know about the aspiration of others for this place (your ancestors)?
- What place or places do you identify with and why?
- How do you take care of your land, trees, stone, moon, sun, falls, and so on?
- Would you please explain your spiritual celebrations with your land, trees, stone, moon, sun, falls, and so on?
- Would you please share your memories of particular trees, plants, animals, and so on?
- How do your childhood memories connect or disconnect you with new plantation processes?
- Would you please explain your traditional stories that you have heard from your parents and grandparents?
- Would you please share your memories regarding your environment and your ceremonies?
- Please share your memories about particular trees/plants/animals that have various kinds of uses, such as medical, ritual, cultural, and others?
- How is the particular land/place connected to power geometries (such as who controls which place/land)?
- How does the particular land/place transfer/move/communicate according to your culture?
-
- How do you explain your current relationships with your cultivation, plants, land, and animals?
- What is the purpose or multiple purpose of each particular plant, tree, land, and animal?
- How do your interactions play out in particular plants, trees, land, and animals?

- How do you see mainstream cultivation practices compared to your traditional practices?
- What do you think about mainstream education/western education systems (which are not related to your cultivation system, cultural, and traditional experiences)? Please explain
- How do government reserved forests, artificial horticulture, and other development programs affect you/your family's cultivation, your relationships with management? Please explain
- Would you please explain how new forms of land management policies are affecting your traditional practices?
- How do Bangladeshi settlers interact with you and your family in village markets, cultivating land, and forest?
- What is the role of the Bangladesh Government regarding the existence of the Khyeng community land rights?
- Are you a Bangladeshi citizen? If so, what does it mean to you?
- How do you feel about your current spiritual belief? Please describe in more detail?
- Do you feel you have all the privileges and rights of a citizen of Bangladesh?
- Would you please tell me your symbiotic relationships with land, trees, and animals?
- In your opinion, what are the main causes of this negligence?
-
- How do you expect land-management policies should be?
- How do you want to save your spiritual relationships with your land and forest?
- What does development mean to you? What do you think development should be?
- Would you please share how your community's traditional practices with the environment such as land, animals, cultivation, and production, are significant for your community?
- How do you think children and youth should learn your traditional practices?
- How do you want to teach your children regarding your spiritual practices?
- Do you think traditional land-management knowledge is important to protect your identity as Khyeng? If so, why?
- What political and cultural condition(s) could be beneficial for the Khyeng land-management?
- How does the situation of the Khyeng change with the change of a government?
- Do you ever receive any favour from the Bangladesh government? What kind of favour do you expect from the government or the mainstream population to save your ancestor land-management and environment resources?
- How should your spiritual belief connect with your land-management?
- What are the dreams and aspirations do you have for your land and environment?
- Would you like to add or cut anything?

APPENDIX M: COMMONPLACE BOOK PROTOCOL FOR CO-RESEARCHERS

PARTICIPANTS

You may want to consider putting in your commonplace book photographs, sketches, drawings of places, plants, animals, and others that you think are significant, etc.

Commonplace Book guiding questions and topics

- How do you connect with land and/or land-management?
- What is your experience of oppression in this place?
- With whom do you engage in land practices with on a daily basis and how?
- What place do you depend on and how?
- What are the dreams and aspirations you have for your place? (this may be for several places)
- Do you know of others' aspirations for this place (e.g., your ancestors)?
- What place or places do you identify with and why?
- Your feelings, memories, and anything else that you want to include

Smell

- What does smell mean to you, particularly regarding trees/plants/animals?
- Please share any stories regarding your, your family, and community members' relationships with smell?
- Do state government reserved forest policies and privatization in your traditional land have any affect in your smell-practices with your everyday cultivation, fishing, collecting water, and so on?
- Please share if specific plants/animals' smells have connections with other animals and plants

Sound

- What do sounds, such as those of the wind, plants, trees, falls, water, and other things, mean to you?
- How do you connect with various kinds of sounds?
- What are the other kinds of sounds that you and your community experience in your everyday practices?
- Would you please share your childhood memories/ any traditional sound stories from your life?
- If you please, share how sounds have significance in your community's ritual practices such as cultivation, decision-making processes, prayer, community gathering, and so on.
- Would you please share the significance of various kinds of sounds relationships in your life?
- Would you please write poems /draw pictures / create music regarding your relationship(s) with sound?

Others ideas (e.g., sight, touch, and taste) that connect you with your land-management and sustainability.

APPENDIX N: ELDER AND KNOWLEDGE HOLDER TRANSCRIPT RELEASE FORM:

ENGLISH VERSION



THE UNIVERSITY OF SASKATCHEWAN

School of Environment and Sustainability

**ORAL TRANSCRIPT RELEASE FORM FOR ELDERS, KNOWLEDGEHOLDERS,
AND YOUTH**

Study Title: *Meanings of Land-Management and Sustainability: An Indigenous Perspective in Khyeng Community, Chittagong Hill Tracts (CHT), Bangladesh*

I will read and explain this form to you, please feel free to ask questions you might have.

I, _____, have reviewed the complete transcript of my personal conversation in this study, and have been provided with the opportunity to add, alter, and delete information from the transcript as appropriate. I acknowledge that the transcript accurately reflects what I said in my personal conversation with Ranjan Kumar Datta. I hereby authorize the release of this transcript to Ranjan Kumar Datta to be used in the manner described in the Consent Form. I have received a copy of this Transcript Release Form for my own records.

Oral Release

I read and explained this Transcript Release Form to the participant before receiving the participant's release, and the participant had knowledge of its contents and appeared to understand it.

(Name of Participant)

(Date)

(Signature of Researcher)

APPENDIX O: ELDER, KNOWLEDGE HOLDERS PHOTO-VOICE RELEASE FORM:

ENGLISH VERSION



THE UNIVERSITY OF SASKATCHEWAN

School of Environment and Sustainability

ORAL PHOTOVOICE RELEASE FORM FOR ELDERS

Study Title: *Meanings of Land-Management and Sustainability: An Indigenous Perspective in Khyeng Community, Chittagong Hill Tracts (CHT), Bangladesh*

I will read and explain this form to you, please feel free to ask questions you might have.

I, _____, have reviewed the complete transcript of my personal conversation in this study, and have been provided with the opportunity to add, alter, and delete information from the transcript as appropriate. I acknowledge that the transcript accurately reflects what I said in my personal conversation with Ranjan Kumar Datta. I hereby authorize the release of this transcript to Ranjan Kumar Datta to be used in the manner described in the Consent Form. I have received a copy of this Transcript Release Form for my own records.

Oral Release

I read and explained this Transcript Release Form to the participant before receiving the participant's release, and the participant had knowledge of its contents and appeared to understand it.

(Name of Participant)

(Date)

(Signature of Researcher)

Table: 3. First Cycle Data Coding. This table's codes are the result of coding undertaken through a participatory process (involving the researcher, Khyeng Indigenous Elders-knowledge holders, and co-researcher participants), with data from traditional sharing circles, individual story sharing, participant observation, photovoice, and commonplace books

<u>Keywords Coding</u>	<u>Keywords Book Page #⁴⁷</u>
Meanings of Research	19
Research is Exploitation	19
Researchers are like Foreign Bird	19
Most Research does not have Connection with Participants	19
Participants' Ontology and Research	20
NGO's Research and Exploitation	38
Significance of Relationality in Research	CPB
Research Should Benefit Participants	CPB
Research and Participants Needs	PV
Research and Researcher Relationships	PV
Data Analysis and Participants' Engagement	48
Participatory Action Research (PAR) and Participants' Sustainability	33
Dreams for Relational Research	CPB
Difference between Jhum Education and Bangali Education	b
Traditional Land Distribution	CPB
Relationships with Jhum's Tools	40, CPB 5,6,
Everyday Food Production from Jhum	15
Reducing Jhum Land	44
Organic Food and Jhum Cultivation	3
Jhum and Khyeng Women	6, CPB
Jhum and other Products	5
Jhum and Spirituality	45, CPB18
Jhum and Daily Practices	H9, 22
Jhum Tools and Marriage Relationships	CPB18
Animal and Spirituality	H9
Khyeng Village History	H10
What is Khyeng Culture?	H13
Protecting Khyeng Culture	2
Babies Born and Animal Relationships	41, 42
Khyeng Traditional (Jhum Cultivation) and Gender Equality	19
Khyeng Traditional (Jhum Cultivation) and Women Decision Making Power	19, CPB
Khyeng Traditional (Jhum cultivation) and Collective Sharing	2
Khyeng Education	10
Bangladeshi Govt's Education Process and Unemployment in Community	10, CPB
Bangladeshi Govt's Education Process and Unable to Work in Jhum	10

⁴⁷ Keywords were identified from transcribed datasets, commonplace books (CPB), and photovoice (PV) keywords.

Bangladeshi Govt's Education Process and Migration	3, CPB
Bangladeshi Govt's Education and Lost Traditional Khyeng Dress	9, H10
Bangladeshi Govt's Education and Decision Making Power	9
Traditional Cloths and Khyeng Indigenous from Garments' Work	9, CPB
Garment Work and Health	9
Khyeng Traditional Land Lost	3
Bangladeshi Land Law and Management over Khyeng Everyday Practice	3, CPB
Bangladeshi Govt's Education (Needs and Cost)	9, 15
Tobacco Cultivation and Exploitation	11
Affects for Bangladeshi Govt Profitable Plantation over Cultivated Land	56
Tobacco Plantation and Money Lending	21
Tobacco Cultivation and High Chemical Fertilizer Use	43
Tobacco Cultivation and Deforestation	4
Tobacco Cultivation and Disconnection with Plants	44, PV
Tobacco Cultivation and Disconnection with Animal	44
Tobacco Cultivation and Disconnection with Birds	23
Tobacco Cultivation and Land Grabbing Strategies	23, CPB
Tobacco Cultivation and Khyeng Child Labour	23, CPB
Tobacco Cultivation and Women Health	23
Starting Point	24
Bangladesh Govt Land Management and Water Crisis in Community	7
Brick Field into Local Indigenous Community/Forest	6,15,
Brick Field Impacts on Community	24, CPB
Brick Field and Khyeng People's Health	12-13
Khyeng Community's Struggle in Removing Brick Field	H19, CPB 6,7
Brick Field and Khyeng Indigenous Women Unemployment	21
Brick Field and Bangali Settler	21
Brick Field and Bangladeshi Govt. Local Administrative Exploitation	21, CPB
Brick Field and Soil Degradation	22, PV
Brick Field and Deforestation	22, PV
Brick Field and Khyeng Children Health	22, 54, CPB
Brick Field and Bangali Owner	23
Brick Field and Unfertile Land	23, CPB
Brick Field and Cultivated Land	53
Brick Field and Bangladesh Govt Reserve Forest	X, PV
Peace Act (1997) and Bangladesh Govt Political Intension	X
Bangladesh Govt's Unwillingness for Peace Act (1997)	VII
Bangladeshi Land Policies Problems with Community's Everyday Practice	VII
Bangladeshi Govt's Education and Khyeng Land Lost	23, CPB
Bangali Settler Land Grabbing and Govt Administered Oppression	26
NGOs Interest and Khyeng Indigenous People	55
Bangladesh Govt. Land Management and High Food Price	21, PV
Khyeng Land Distribution and Karbary Responsibilities	31
Khyeng Traditional Land Practice	CPB
Rice Bear and Sharing Work in Jhum	6-7
Rice Bear and Spirituality	9

Traditional Land Management Lost	24, CPB
Land-water Sources and Khyeng Relationships	25, PV
Bengali Setter and Khyeng Indigenous	40
Bangladesh Govt Profitable Plantation over Khyeng Indigenous Practice	41
Why does Laitu Khyeng Live on Plain Land and Hilly Land?	25, CPB 19, 21
Traditional Medicine and Khyeng Relationships with Plants	25
Spirituality and Land Cultivation	25-26
Bangladesh Govt Land Management and Health	26-27
Bangladesh Govt Reserve Forest and Khyeng Traditional Practices	27
Khyeng Plants and Forest	37
Khyeng Spirituality and Land Relationship	27
Khyeng Moon and Marriage Relationships	27
Khyeng Housing System and Relationships Land, Animals, and Others	32, CPB
Bangladesh Govt Reserved Forest into Khyeng Community	33
Two Khyeng Communities	33
Laitu Khyeng	27
How have Bangali Settlers been grabbing Khyeng Land	28
Headmen and Khyeng Land Distribution	28
Bangladesh Govt Reserved Forest and Khyeng Land Grabbing Strategies	38, CPB
Bangladesh Military Camp and Oppression on Khyeng Community	39
Fish Hunting and Khyeng Life	45-46
Bangali Setters before 1971 on Khyeng Land	47
Profitable Plantation Expansion	49
Meanings of Spirituality to Khyeng Indigenous Community	49-50
Meanings of Govt's Forest to Khyeng	CPB18, 20
Fear for Govt. Artificial Management	CPB18, 20
Khyeng Puja (Spirituality) and River Relationships	56
Khyeng Puja (Spirituality) and Land Relationships	51-52
Story of Khyeng Lost Land	51, H10
Khyeng Traditional Land Lost and Poverty	52
Khyeng and Marma Indigenous Communities	H3
Khyeng Land Lost and Daily Labour	H4
Childhood and Khyeng Village	53
Meaning Forest to the Bangladesh Govt (As Khyeng Thinks)	H9
Govt Forest Management and Khyeng Forest Lost	H6
Khyeng People Know how to Protect Khyeng Soil Erosion	H17
Natural Water Source and Khyeng Traditional Science	H18
Banglali Money Lending Business in Khyeng Community	H18
Fish and Khyeng Soul Relationships	H19
Traditional Surplus Production from Jhum	b-c
Bangladesh Government Enforced Cultivation and Khyeng Poverty	10a
Jhum Paddy Production and Puja (Spirituality) Relationships	14a
British Colonial Period and Khyeng Indigenous Jhum Land	16a
Khyeng Indigenous Community's Name and Plant Relationships	16a
Saving Traditional Cultivation Culture	20a
Khyeng Dream and Sharing Culture	24a

Traditional Practice	CPB26
Saving Land from Bangali Settlers	8
Hope for Khyeng Education System	H10
Hope	7
Bangladesh Govt and Recognizing of Khyeng Customary Practice	12
Bangladesh Govt and Recognizing of Khyeng Land Rights	26
Khyeng Own Literature and Protecting Khyeng Land	20
Hope to Stay in Village rather than Going to City for Work	20
Hope from Indigenous Research	39
Khyeng Hopes Jhum Cultivation	38
Youth Activities and Protecting Khyeng Land-River	20
Khyeng Youth Dreams and Sense of Place	20, PV, CPB15
Sense of Mountain	CPB Poem
Khyeng Sense of Education and Reducing Poverty	1,2,3
Imagination for Returning Khyeng Dream Time	8, PV
Saving Traditional Dress	H18
Youth Activity for Protecting Traditional Land	21
Youth in Action for Sustainability	CPB 9,
Youth Dream for Sustainability	CPB22, 23
Sense of Sustainability	CPB24
Sense of Traditional Relationship	CPB16
Youth Activities for Reducing Profitable Plantation	16
Youth Imagination for Reducing Tobacco Cultivation	H21
Khyeng Dream and Khyeng Education	H21
Dream and Jhum	CPB
Hope from Govt	CPB 16
Dream for Sustainability	CPB21
Jhum and Women Empowerment	CPB19
Bangladesh Land Acts and Khyeng Youths Education	CPB17

Table 4. Second Cycle Theme Coding. This table's theme coding undertaken through a participatory process (participants included the researcher, Khyeng Indigenous Elders-knowledge holders, and co-researcher participants) building on the first cycle themed coding.

Theme Coding	Sub-Theme	Findings Chapter Parts
Khyeng Indigenous Meanings and Definitions	<ul style="list-style-type: none"> • Land, • Management • Land-Water Management 	Part I: Traditional Land-Management Customs and Practices in the Laitu Khyeng Indigenous Community
Traditional Land Practices	Modes of Land Distribution <ul style="list-style-type: none"> • <i>Karbary</i> • <i>Headmen</i> • <i>Raja</i> Modes of Food Distribution <ul style="list-style-type: none"> • Consumption, • Market 	
Spirituality	<ul style="list-style-type: none"> • Land • Water 	
Bangladesh Government's Land-Management Policies and Practices	Land Management Reserve Forest Policies <ul style="list-style-type: none"> • Profitable Plantations • Tobacco Plantations • Brickfield 	Part II: Existing Bangladesh Government Land-Management Policies-Practices and their Affects on Khyeng Indigenous Community's Traditional Land Management
Land Grabbing, Deforestation, and Poverty	Reasons <ul style="list-style-type: none"> • Bangali Settlement Policies (After 1972) • Brick Field • Profitable Plantation • Money Lending and Micro-Credit (Social Business) Exploitation. 	
Hope to Protect Khyeng Cultivation Culture	Hopes For <ul style="list-style-type: none"> • Traditional Customary Land Rights and Practices • Khyeng Education (e.g., at least up to grade five) 	Part III: Hopes and Dreams for Protecting Traditional Land-Water Management (Sustainability)

<p>Youth Sense of Activities to Protect Place (Land or Water)</p>	<p>Youth Activities</p> <ul style="list-style-type: none"> • Learning Language and Cultivation Culture • Protecting Water, Animals, Plants, and Birds • Learning Land-water Policies • Growing Foods • Learning Stories and Spirituality from Elders • Sharing Knowledge, Imagination • Learning Cloths Making • Teaching Younger <p>Speak up for Immediately Stopping</p> <ul style="list-style-type: none"> • Brickfield • Tobacco Plantations • Profitable Plantations 	
<p>Responsibilities for Achieving Sustainability through Participatory and Collective Processes</p>	<p>Being Part of the Land-water Management Policies and Decision Making Processes with CHT</p> <ul style="list-style-type: none"> • Forest Department, Reserve Forest Department, Indigenous Cultural Department, Land Reform Policy Department, and Education Institute • NGO's Development, Research, and Policies • Development Agencies • Educational Institutes • Food Security Institutes 	